

VOL. XV. NO. 4

JANUARY, 1918

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# THE CORNELL COUNTRYMAN

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THE CORNELL METHOD OF SELECTING FOWLS  
FOR EGG PRODUCTION

J. E. RICE

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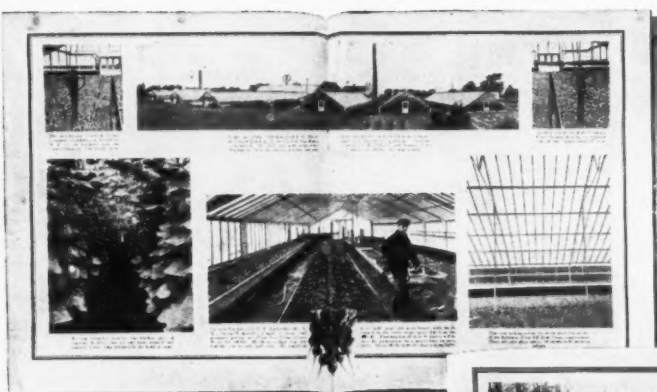
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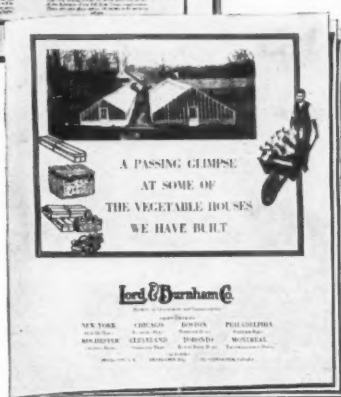
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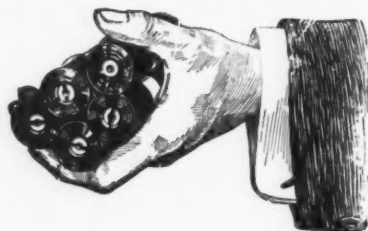
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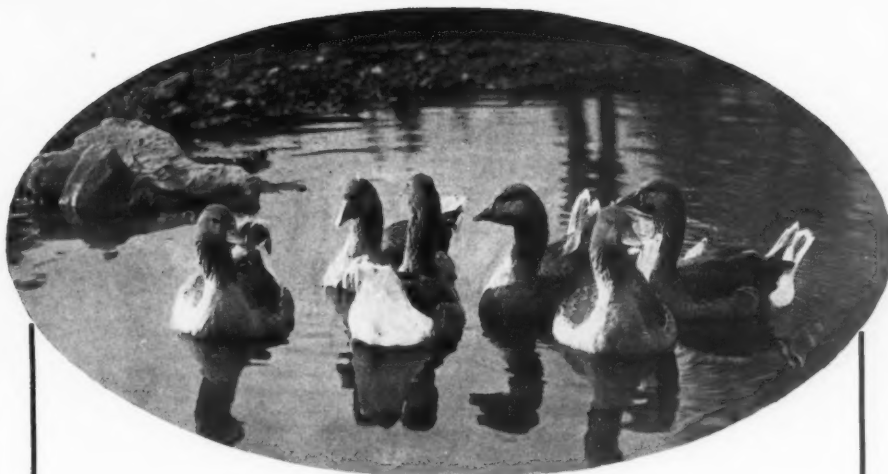
One of the most popular books we believe on Cornell University, is the new book by Professor von Engeln, "Concerning Cornell." He takes you on a trip around the Campus, describing the different places and buildings in a very interesting way. You will want to see this book and have one for yourself.

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THE CORNELL COUNTRYMAN is for all who study agriculture in schools or on the land—more than a "college paper" in that its field is beyond the campus; more than a "farm paper" in that it may enter into rural matters at a point where the farm paper must leave off. Its position is that of advanced authority on agricultural developments; its purpose to report these developments truthfully and to interpret them in terms of their probable permanence, the degree to which they should contribute to the economic uplift and future human happiness of country people.

The paper is published at Ithaca, N. Y., by a board of students of the New York State College of Agriculture selected by competition. Its finances are controlled by an incorporated board of professional and business men of which M. C. Burritt is president. The subscription rate is a dollar a year, payable in advance; single copies twenty-five cents. Advertising rates on application. Entered as second class mail matter at the post office, Ithaca, N. Y. under act of Congress, March 3, 1879.



#### THE KIND TO KILL

Her record was 36 eggs. Her first egg was laid March 3, 1917, and the last was laid June 16, 1917. Note the full fat head, the shrunken comb, wattles and earlobes, the shallow erect body and the new smooth plumage. She was an early quitter and was decidedly yellow in the shanks, beak, earlobes, eyelids and vent.

#### THE KIND TO KEEP

Her first egg was laid Oct. 15, 1916. Her record was 203 eggs. Note the full, waxy comb, the bright intelligent eye, the alert, active position, full, deep abdomen, and old ragged plumage. Her shanks, beak, earlobes, eyelids and vent were bleached out showing that she had laid heavily.

# THE CORNELL COUNTRYMAN

Vol. XV

ITHACA, N. Y., JANUARY, 1918

No. 4

## The Cornell Method of Selecting Fowls for Egg Production

By J. E. RICE

Professor of Poultry Husbandry at Cornell University

THE time of year when fowls lay is an indication of the number of eggs that they are likely to lay in a year. The chart which accompanies this article shows how accurately fowls may be selected according to their laying capacity when we know two factors, namely, when they commence to lay as pullets, and when they cease to lay at the end of their first laying year.

Since pullets of any given variety hatched at the same time and reared under similar conditions will normally commence to lay at different ages and will cease to lay at different times, it is necessary to know when each individual in a flock lays its first and last egg the first year and mark the birds during a period of from three to four months. For the balance of the year laying observation is unnecessary for all practical purposes. This reduces by nearly three-fourths, the time and labor of the usual method of daily observation.

Either one of two methods may be used to determine when fowls lay their first and last egg in the first laying year, namely, by trapnesting and by their appearance. The former requires

more time and expense and is a little more accurate; the latter is easy to learn and is sufficiently reliable to meet the usual requirements of eliminating the poorest and retaining the best fowls. Each method is described in detail in directions given in a free circular soon

**Save feed by selling your poor layers; increase your production by retaining only your good layers; and improve your flock each year by breeding from only the choicest, long laying, vigorous hens, mated to males known to have come from the best hens.—J. E. Rice.**

to be published by the New York State College of Agriculture at Cornell University, Ithaca, N. Y. A careful study of the figures in the chart will show

accurately the method of grouping according to the time the birds lay their first and last egg in their first laying year, determines the egg production for the first year, and, to a large extent, for the two succeeding years. The value of the eggs is given and the average number of eggs laid and their value for three years. By this method, one is able to discard during the first year, fowls that in all probability, would be money losers each year if retained, and also to retain for several years the most profitable fowls for production and for breeders.

While it has been necessary in this chart for the sake of illustration, to take fixed ages and dates for selection



of the fowls, it is not necessary in practice to adhere absolutely to the selection periods here used. The time limits to be used for selection will vary somewhat with the location, the variety of fowl, the time of hatching and the method of care and management. For Leghorns hatched from about the middle of May in New York State, the selection periods used in the chart will apply.

Where one wishes only to separate his fowls into three groups, namely, breeders, layers and culls, the chart shows this may be done by placing a legband on the left shank of the pullets that commence to lay before they are eight months old and a band on the right shank of those that are laying after September 1st, or thereabouts, near the end of their laying year. This divides the 166 fowls into four classes, namely, 81 fowls having legbands on both shanks; all of these are good layers; 44 fowls having legbands on the left shank only; these are medium to good producers; 13 fowls having legbands on the right shank only; these are medium to good producers; 28 fowls without legbands on either shank; these are all poor layers. A more accurate grouping of the fowls may be obtained by using a color system of legbanding to indicate by 30 day periods the time when the birds laid their first egg and when they laid their last egg the first year.

Celluloid bands of five colors are used to indicate degrees of quality in the following order: (1) blue; (2) red; (3) green; (4) yellow; (5) black. Pullets laying before 6 months of age have a blue band on left shank; 6-7 months a red band; 7-8 months a green band; 8-9 months a yellow band. Those

ceasing to lay in November have blue band on right shank; in October red band; in September green band; before September yellow band. The chart shows how each of the four groups of fowls: 81, 44, 13 and 28, as described above, will be further subdivided by the color banding scheme of marking pullets on the left shank when they lay their first egg and on the right shank when they lay their last egg the first laying year. By this method one is able to distinguish at a glance, the birds in a flock that began to lay when they were 6 months of age, 7 months, 8 months, 9 months, etc., or ceased to lay before September 1, October 1, November 1, etc., and thus be able to estimate approximately their laying value.

A careful study of the groups, the average when they laid the first egg, the length of the laying period, the number of birds in each group, the number of eggs each year, the value of the eggs laid each year, and the grade based on the three years record, as shown in columns when read from left to right in the chart, will show interesting results. The term precocity is used to indicate the early laying, i. e., the age at which a pullet lays her first egg; while persistency is used to designate the time hens cease to lay at the end of the laying year. The length of the laying period is a term to describe the span of time between the laying of the first egg and the last egg in the first laying year.

Try marking your birds by the method described and note the remarkable difference in the appearance and the laying value of the birds. This is the surest way of learning how to know the laying value of a hen when you see her.

#### Key to Prices in Estimating the Value of Eggs

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
.45	.34	.25	.23	.23	.25	.28	.34	.39	.53	.62	.51

#### Key to Grade

144 eggs or more—Breeders  
132-143 eggs—1st Layers  
120-131 eggs—2nd Layers

108-119 eggs—1st Culls  
96-107 eggs—2nd Culls  
84- 95 eggs—3rd Culls  
72- 83 eggs—4th Culls

THE CORNELL METHOD OF SELECTING FOWLS FOR EGG PRODUCTION.  
 ACCORDING TO SEASONAL DISTRIBUTION OF EGG PRODUCTION BY 4 FACTORS.  
 Precocity, Persistency, Length and Time of Laying Period.  
 Two Methods of Legbanding 166 S.C.W. Leghorns at Cornell University

Flock I	Laid let egg pul- let year	Precocity Average in days at let egg	Color of Legband Left	Color of Legband Right	Laid last egg let yr.	Persistency Color of Shank	No. of birds	Length of laying period days	Value 1st yr.	Value 2nd yr.	Value 3rd yr.	Value 4th yr.	Ave. Val. Prod. 3 yrs.	Grade Based on 3 yr. Record
Flock I Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	Before 6 to 7 mo. last egg after 7 to 8 Sept. last	180.0 200.4 201.9 201.9 226.3 215.4 209.3	Blue Red Red Red Green Green Left	Blue Red Red Red Green Green Right	Nov. or later Sept. Oct. Nov. or later Sept. Oct. Nov. or later	Blue Blue Blue Blue Blue Blue Blue	1 18 22 22 15 11 81	408.0 291.0 309.3 344.2 277.6 291.9 303.3	20.00 154.44 176.04 195.22 150.73 160.18 166.20	6.81 4.71 4.71 5.50 5.72 4.34 4.40	146.00 136.78 136.78 136.78 128.00 128.00 140.62	4.09 3.70 3.70 2.91 2.91 3.75 3.60	163.00 117.44 122.77 112.33 115.36 110.36 123.68	5.04 5.04 5.04 5.04 5.04 5.04 5.04
	Ave. 81 birds 48.7%													
	Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	175.0 198.1 226.0	Blue Red Green	Blue Red Green	Aug. or before " " " "	Yellow Yellow Yellow	3 22 19	271.3 258.9 425.4	154.33 124.45 114.72	4.13 5.11 2.70	132.33 110.91 98.53	2.97 2.50 2.16	114.33 99.23 87.92	1.45 2.60 2.25
	Ave. 44 birds 26.7%													
	Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	207.7 251.0 251.0 251.0 251.0 251.0 251.0	Left Yellow Yellow Black Black Black Black	Left Yellow Yellow Black Black Black Black	In Oct. Nov. or later Sept. Oct. Nov. or later Sept. Oct.	Red Blue Blue Blue Blue Blue Blue	44 3 3 2 2 1 13	245.4 244.4 244.4 244.4 244.4 244.4 244.4	122.32 146.67 173.00 83.83 15.50 114.51 114.51	3.00 3.68 4.49 1.82 2.71 2.71 2.71	107.02 136.33 160.00 122.07 16.00 142.00 142.00	2.39 3.41 4.16 1.09 2.50 3.34 3.34	95.39 119.00 113.00 110.00 110.00 133.00 133.00	2.07 2.92 2.82 2.51 2.51 2.51 2.51
Flock IV Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	Before 6 to 7 mo. last egg after 7 to 8 Sept. last	253.6 301.2 270.6	Yellow Black No Band	Yellow Black No Band	Aug. or before " " " "	Yellow Yellow Yellow	18 20 28	200.0 199.4 176.4	98.06 78.20 90.25	2.16 1.61 1.98	116.33 91.50 107.46	2.72 2.01 2.47	106.78 75.60 95.64	2.39 1.51 2.08
	Ave. 28 birds 16.5%													
	Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	253.6 301.2 270.6	Yellow Black No Band	Yellow Black No Band	Aug. or before " " " "	Yellow Yellow Yellow	18 20 28	200.0 199.4 176.4	98.06 78.20 90.25	2.16 1.61 1.98	116.33 91.50 107.46	2.72 2.01 2.47	106.78 75.60 95.64	2.39 1.51 2.08
	Ave. 28 birds 16.5%													
	Laying before 6 to 7 mo. last egg after 7 to 8 Sept. last	253.6 301.2 270.6	Yellow Black No Band	Yellow Black No Band	Aug. or before " " " "	Yellow Yellow Yellow	18 20 28	200.0 199.4 176.4	98.06 78.20 90.25	2.16 1.61 1.98	116.33 91.50 107.46	2.72 2.01 2.47	106.78 75.60 95.64	2.39 1.51 2.08

# Wing Molt as an Indication of Production

By O. B. KENT

Assistant Professor of Poultry Husbandry at Cornell University

**D**URING the past few weeks it has been found possible to determine quite accurately by the primary wing feathers how long a fowl has been molting. Our records show that the time that a fowl stops laying in the fall is closely related to her total egg production. If we can tell by the primaries the approximate date that a hen started molting, which with Leghorns at least, practically means stopped laying, we can then determine quite accurately how many eggs the bird laid.

Beginning with the primary next to the axial feathers of the wing, the primaries are gradually renewed. The axial feather, shown at A in the illustration, is the short feather between the primaries and secondaries. It takes approximately six weeks for the first or inner primary to be completely renewed and about two weeks more for each additional primary that is completely renewed until it has attained full length and the blood has gone out of the quill. A feather that is not full grown is generally easily detected by its roughness so that it is not necessary to examine the base of most feathers. An old unmolted feather is, of course, usually worn, frayed and dirty.

Fortunately from a financial side, but unfortunately from a selection standpoint, some hens after once starting to molt, decide that they had rather lay than molt and so they give up their vacation. This complicates matters so that it is necessary to distinguish between a regular molter and a vacation bird. This is generally fairly easy because there is then a marked difference in the length of the feathers. When a bird's wing shows that it has been taken

a short vacation, only one week should be considered lost for each feather renewed because the bird laid and grew feathers at the same time.

An examination of the first illustration shows there are only ten primaries. Therefore a bird should take 24 weeks to go thru a complete molt, and so, after the first of January, it would be impossible to distinguish a bird that started molting the first of June from one

that started the middle of July. Hence, the method has its greatest use between the first of July and the first of January.

In the illustration the feathers showing complete molt are marked with the number of weeks that they represent. To determine how long the bird had been molting, the numbers should be added. Since the feathers of the wing in last illustration are not graded, as are the other birds, only one week is taken off.

Knowing then when a bird stopped laying, it is necessary to use some standard of egg production as a basis for estimating production. Five eggs a week is a fair approximation of the production of the average bird in our flock while they are laying. With our birds continuous production up to the first of November means a record of 200 eggs plus or minus, depending on when the bird began laying, and how much vacation she took.

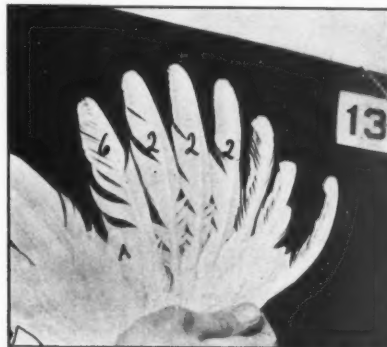
Using 200 eggs as the standard for a bird laying up to the first of November, for every week lost, before the first of November, five eggs can be deducted from the record. Hence, if a bird stopped laying the third of October, the standard record would be  $200 - 4$  (weeks)  $\times 5$  or 180 eggs. If a bird

stopped the first of June, the standard record would be 200 - 22 (weeks) x 5 or 90 eggs. Since fowls do not normally molt before the first of June, there is no molting distinction between a fowl laying forty and another laying 90 eggs.

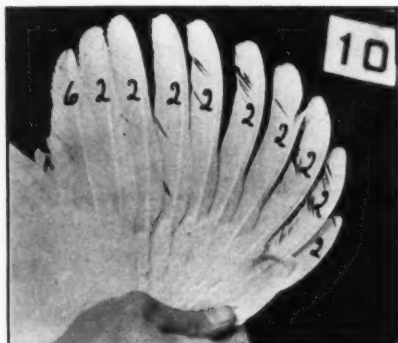
Having used the wing molt to tell when a bird stopped laying and then having determined what would be standard production at that time, the question then comes up as to whether the fowl did as well or better than standard and that needs good judgment to be accurately answered.

The first question that should be settled in regard to whether a fowl comes up to standard or not is whether the bird is physically equipped to obtain enough

The following table giving guesses and actual egg records shows that it is



How the Wing of a Vacation Bird Appears



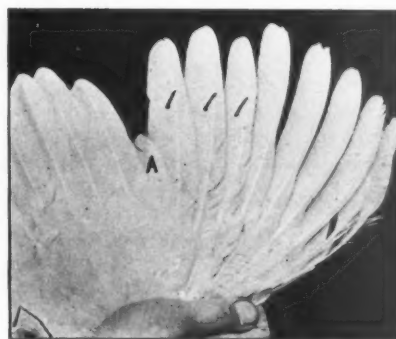
The Primary Feathers and the Number of Weeks in Which Each Mature

food to produce eggs. Has she a clear, round and bright eye, or do her eyelids cover up her eyes; has she a good, strong pair of shanks, and has she used them as shown by straight, well worn toenails? Is there room enough in the body to hold both feed and eggs, or is she a little pinched up bird? Finally, does she turn her feed into fat as shown by thick pelvic arches and a hard abdomen, or does she turn the feed into eggs as shown by fine pelvic arches and a good pale color?

With a little experience it is quite readily possible to separate the good from the medium and the medium from the poor birds.

really possible to estimate very closely how many eggs a hen has laid. The observations were made November 15. The egg records include the production of the birds from November 1, 1916, to November 15, 1917. While several of the estimates are considerably out of the way, yet there are only two birds that are really wrongly classified, one low bird being called high and a medium bird being called low. It certainly would not have paid to have trapnested the flock in order to get those two birds correctly placed.

(Continued on page 212)



An Incomplete Molt

# A Standard War Poultry Ration

By G. F. HEUSER

Instructor of Poultry Husbandry at Cornell University

**D**UE to the present food situation, the question of a war poultry ration is met with most frequently. For some time it has been in the minds of the poultrymen of several of the eastern colleges to get together to discuss the food problem and to arrive, if possible, at a standard war ration for poultry. Recently the government issued a regulation prohibiting the use of more than 10 per cent of any grade of wheat in rations for feeding poultry. Here is a ration which meets this requirement and at the same time observes the fundamentals for poultry rations. Action was taken at a meeting held in New York on November 22, with representatives from Connecticut, Massachusetts, New Jersey and New York (Cornell being present).

It was found that all of the colleges represented had been trying to meet the situation and were recommending similar rations. Thus it was with little difficulty that a standardized war ration for poultry was adopted. It was felt that this was desirable in order to give opportunity for coöperative buying and to have one ration which might be considered standard and which could be used as a basis for working out others to meet local conditions. The ration decided upon, to be known as the Standardized War Ration for Poultry, and adopted by Connecticut, Massachusetts, New Jersey and New York, is as follows:

500 lbs. cracked corn, with a variation of 400-600 lbs.

100 lbs. feed wheat, with no variation.

200 lbs. barley, with a variation of 100-300 lbs.

200 lbs. heavy oats, with a variation of 100-300 lbs.

The above scratch grain is to comply with the specification of having not less than 10 per cent protein, 68 per cent carbohydrates and 4 per cent fat, and not more than 5 per cent fiber.

The composition of the mash must not be less than 20 per cent protein, 58 per cent carbohydrates and 5 per cent fat, and not more than 7 per cent fiber.

It will be noted that allowance has been made for variations in the amounts of the different grains used, with the exception of wheat. This will permit the use of the grains that are most available and cheapest in the various localities.

The mash mixture is made up as follows:

100 lbs. wheat bran  
100 lbs. wheat middlings  
100 lbs. corn meal, corn feed meal or hominy  
100 lbs. gluten feed  
100 lbs. crushed or ground oats  
100 lbs. meat scrap.

This ration was made up with a view to the probable availability and price of feeds in the future. It is believed that there will be available for feeding the feeds as recommended. It is true that at the present time corn and corn meal are high in price, but it is believed that corn and its products, corn meal, corn feed meal, hominy and gluten feed, will be available and cheaper when this year's large crop gets on the market. It is also hoped, due to the fact that a large part of the wheat shipped to the Allies will probably be milled in this country, that wheat by-products will also be plenty. Oats, crushed oats, barley, and its products also bid fair to be cheaper.



As regards the method of feeding the ration, it is recommended to hand-feed the scratch grain, scantily in the morning to induce exercise, and all the grain the birds will eat in the afternoon in time to find it before dark. There should be no grain in the litter at noon; when found, it indicates feeding too much in the morning. The mash is fed dry in hoppers open all day. In general, feed by weight of about equal parts of grain and mash.

The mash mixture calls for 100 lbs. or 16 2-3 per cent of meat scrap. Feeding equal parts of grain and mash makes this 8 1-3 per cent of the entire ration. Animal protein is absolutely essential for good egg production. Meat scrap is considered one of the best sources of animal protein and it is recommended that it be used in the propor-

tion mentioned as long as it is obtainable at a reasonable price. Buttermilk or skimmed milk may be substituted for the meat scrap. If this is done, give it to the birds to drink. About 12-14 quarts for 100 hens per day will furnish the same amount of protein and nutrients that would be supplied by the meat scrap. It is held by some that one-half of the meat scrap can be replaced by a good grade of fish scrap. Good digester feeding tannage also gives promise of value.

It is well to keep in mind at all times the other factors which influence egg production. The more important of these so far as feeding methods and practice is concerned are as follows:

**Litter:** Induce exercise by feeding all grain in dry, clean, straw litter, 6 to

(Continued on page 212)

## Results of 1917 Poultry Selection Campaign

By L. M. HURD

Extension Instructor of Poultry Husbandry at Cornell University

**E**ACH season for a number of years, the poultry department has assisted a large number of private individuals in culling out the non-productive hens from their flocks. No effort, however, had been made up to two years ago to make a feature of this work. During the summer and fall of 1916, a series of field demonstrations were carried on in fourteen counties of the state. The work proved so popular that a regular campaign was planned for the year 1917.

At the time the state census was taken in April there were 10,790,000 hens in the state. Plans were made to reach 8 per cent of this number, or 863,000 hens. The cooperation of the farm bureaus and poultry associations in the different counties was asked. Responses came from 28 counties. A special poster was designed by the poultry department and used in many of the counties, and a regular attendance card

was provided to gather information. There were 280 demonstrations held with a total attendance of 6,427 or an average of 22.9 persons. The people attending the meetings were asked to state on their cards the number of hens they owned and whether they intended to select or not. In this way 401,096 hens were pledged. This was 8.1 per cent of the hen population in the counties in which the selection campaign was pushed and nearly 4 per cent of the total hen population of the state.

It is difficult to estimate the value of the work for the state because it is so far reaching in its effect. There were, however, 52 people in 12 different counties, who signed cards stating that it was worth \$8045.00 to them to know how to select their hens last year. One farm bureau agent estimated that the series of demonstrations carried on in his county this year was worth \$9000.00 to the county.

## ARE YOU THE MAN ?

'Tis not the tongue of theorist to-day  
That will the world-pang, soften or abate,  
Nor men at arms, embroiled in deadly fray  
Alone shall serve to set the old world straight ;  
There must be one, when Ceres' car shall pass,  
To woo her smile, for human good and weal,  
And bury Want beneath her glowing mass  
Of golden grain, or edge the share of steel,  
Are you the man ?

'Tis not the task of menial to plow  
The liberal loam, or fit the fertile field  
That stretches sullen, brown and barren now,  
And must be conquered, ere it treasure yield ;  
It is for him of courage, brain and brawn,  
To do the thing that is his nation's need,  
It is for him to stoutly face the dawn,  
Break well the soil, and scatter in the seed,  
Are you the man ?

Not bearing arms on foreign battle ground,  
Shall we not also fields of glory tread ?  
Our native fields that spread their riches 'round  
That we may reap, and all the world be fed ;  
'Tis Martial Spirit, Soldier of the Soil,  
That makes the man full worthy of the claim  
That he is equal, by his share of toil,  
To men that fight in Freedom's treasured name !  
Are you the man ?

Wm. Prindle Alexander, '17

# I. Rural Dramatic Extension

By RUSSELL LORD, Ex-'18

THIS, the first of two informal and altogether unauthoritative papers, will report the results of a questionnaire survey which sought to find what is being done by American agricultural colleges in the matter of extending aid to the folks out at the cross-roads who are "getting up" a play. The survey was taken in the spring of 1917.

Three-quarters of such extension lies West of the Mississippi. We of the East have heard of it only in snatches, perhaps just enough to whet our wonder at such decided and apparently significant departure from our ways of "educating the farmer." At a distance it looked as if these Westerners were attempting to develop something of a rural art along with rural science. There is some truth and some error in such an assumption, enough of both to give the matter an interest above mere statistics of "states reporting work" and "states not reporting work." Let us have the statistics over and done with, so that we may have no facts in the way when (in our second paper) we come to our main purpose,—to array theories as to what should be done against the West's record of what has been done; to lay our youthful head upon the block, in expression of a conviction that many of the good pioneers, whose achievements make up this first paper, are traveling the wrong trail.

A glance at the map and at the caption thereof gives the gist of all facts and figures secured. One-sixth of the 48 states reported work; one-half reported no work; the rest rendered no report.

NORTH DAKOTA, under the leadership of Alfred Arnold, seems to be doing far and away the greatest amount of work. Rural Dramatics out there means more than it would in New York. They have no Broadway; seven out of every eight are country-bred and live in

the country. They are a heterogeneous mass—twenty-five nationalities; a hundred thousand Norwegians, sixty thousand Russians, forty-five thousand Germans. "All of these countries have a civilization much older than our own. All have a poetry, a drama, an art, a life in their previous national existence which, if brought to light through the medium of some sociological force, would give to North Dakota a rural civilization such as has never been heard of in the history of the world." An expressed aim of their dramatic work is to achieve such fusion; perhaps this is why they have been so wise as to confine most of their productions to plays, broad and worth-while in themselves. Universality is more than desirable under such circumstances as confront North Dakota; it is necessary.

A very complete play bureau is maintained—in response, it is said, to "literally thousands" of the requests for such aid. But the heart of the work, the thing that pumps blood into the play service and into all of the other auxiliaries is *The Little Country Theatre*, a sort of artistic laboratory, a city play-house boiled down and fitted for the need of a country community. This theatre is in Fargo, the University city, and its productions are those of agricultural students, but everything is done to render the performance of a play in the Theatre only a start for many other such performances thruout the length and breadth of the State. Graduates of the college start little country theatres in the town halls and empty hay-lofts of their home countrysides. Three such ventures, eminently successful, are specifically mentioned. The idea has also been carried beyond the state lines by graduating enthusiasts. "Residents of Canada, Porto Rico, and the Philippine Islands are building little country theatres."

The list of plays which are thus going

the rounds is interesting not only for its broadness, but further for the fact that it was suggested through "the courtesy of Professor A. M. Drummond of Cornell University." It includes some of the plays which have been given here at Cornell, notably *Falling Leaves* and *Leonarda*. Such lately modern plays as *Miss Civilization*, *The Lion and the Mouse*, *The Fatal Message* which are recommended, show signs of thoughtful choice. One-act plays, notably those of the Irish players, have been found successful, and occasionally, where the talent is particularly untried, and old-time minstrel show has started things off. *Cherry Tree Farm*, an English comedy, is particularly recommended.

MINNESOTA has sponsored two didactic plays from the pens of agricultural students—*Back to the Land* and *The Hearth Fire*. These two they have printed and have for sale at ten cents. Performance rights are free within the state but a royalty fee of five dollars is charged to communities outside Minnesota. Minnesota sends student troupes out over the state upon payment of expenses.

KANSAS does a good deal on the campus, not reported as consciously attuned to the rural dramatic extension. The Rural Service Department has for two years been carrying on Rural Pageantry extension. An Assistant in Pageant Training spends a week in communities desiring such service, rehearses the affair, and presides over its production.

MONTANA'S work is in charge of the Dean of Women, who is enthusiastic about the plays of North Dakota and Minnesota and who thinks that "without doubt these plays should be suggestive and rather problematical." She and another lady have written *The Guide Post*, a rural problem play which has been given about the state by students. They are now at work on "another two act play, *The Farmerettes*, which has to do with the conservation of food."

UTAH makes use of its modern languages department, under Frank R. Arnold. His slogan is "More brains in

the country amusements." "So," he continued, "the plays we send are of a greater dramatic and literary value than that which the villagers would find for themselves." An apparently excellent suggestion comes from their successful use of *The Chicago Farmer*, made into a French play from Mark Twain's *How I Became the Editor of an Agricultural Paper*, and translated into English by Mr. Arnold. He was in New England last summer looking for evidences of dramatic extension work but found nothing much except beliefs that it would be a nice thing. He says further that he has had several inquiries from county agents in several states as to his play list.

INDIANA (Purdue) has done work in the dramatic inoculation of regular and short course students. Play advice is extended only upon request. Mr. Bernard Sabel, the informant, writes that "before long I hope to publish a bulletin on rural communities and dramatics."

IDAHO is included in this list because they promise to take up the work next fall, "rather extensively."

ALABAMA is included because Tuskegee has produced a few rural plays before negro audiences in the country and finds it "one of the best possible ways to interest our people. We have dramatized the rural church with some success and have always attracted large audiences and taught valuable lessons."

Bringing to a close this report, it is necessary to touch for a moment the outlook for a spread of the work, as revealed in the returns of the survey. Twelve of the 24 states reporting no work, displayed, thru their spokesmen, something more than a casual interest in it; several asked to be informed of the results of the investigation, and several others, welcoming the writer to the ranks of those interested, requested reciprocal information and assistance. The great majority of those interested, like the majority of those engaged in the work, seemed to see it solely from the "lesson" side.

(Continued on page 214)

## Works the Hens Day and Night

By J. P. JORDAN

**T**HE Sunny Crest Company began operations in 1912, and its start was along about the same lines that a great many others have been in the poultry business. We purchased birds—each with two legs, with one head, and with feathers.

After all the birds were rounded up we found that we had about 1300 or 1400, and then we started to buy feed. We then continued to buy feed. Once in a while we would find an egg.

A few of the birds were really good, and there are traces of these original few in our flocks as they stand today. The great majority, however, including their progeny, have long since taken a personally conducted tour to bird heaven.

Not long after starting our plant, we began to run into our troubles. It was then that we called on experts from Cornell to assist us. From that time on, we have followed as closely as we could, the advice and directions of the representatives of the department of poultry husbandry, and if we are today in a position approaching success in the breeding of White Leghorns, we owe the greater part of the credit to the advice and interest of our good friends at Ithaca.

In 1913 we started to clean up the worthless stock which we had on our plant. We also bought eggs from birds who were descendants of the well known "Lady Cornell," and we bred the cockerels raised from these eggs with 500 magnificent hens which we purchased from the Yates Farm at Orchard Park, New York.

During this year, we culled our chicks very strictly, but even then nowhere

near as strictly as we did in the rearing seasons of 1914, '15, and '16. In each successive year, having once tested the enormous value of keeping only the very strongest and perfect birds, our culling has become absolutely merciless.

We also at this time picked from our

flock, which had grown to 3000 layers, the very finest specimens, and from these made up special hatching pens from which we kept the finest cockerels for the next year's breeding.

The final results of the merciless culling, and of breeding only from the very finest birds, have more than justified what seemed at the time to be a prodigal waste of bird life.

One of the principal lines on which we have worked has been that of trying to simulate ideal conditions at every season of the year. This is most strikingly brought out in two points, one of great magnitude, and the other quite interesting and certainly valuable.

The lesser point is a scheme used in the production of green food in the shape of sprouted oats. Our oat sprouting cellar was so designed as to have an equal temperature thruout, using ventilating stacks to draw the cold air from the floor, which has the effect of drawing down the heat, thereby equalizing the temperature thruout the room to a marked degree.

The principal point in the production of sprouted oats is the method used in wetting them. We have a common thirty-gallon hot water boiler, with the hot and cold water piped to a common pipe in which we mix the water to a constant summer rain temperature. In this condition the water goes into the boiler, being carried to the bottom thru a

**J. P. Jordan is operating one of the largest, most elaborate, and most successful poultry plants in the country. The Countryman asked Mr. Jordan to describe the workings of his plant. In doing this Jordan attributes the greater part of his success, "to the interest and advice of his good friends in the poultry department at Cornell."**



pipe from the top. To fill this boiler we open a valve which allows the air to escape.

When the boiler is filled with water at the right temperature, we close the relief valve, and, having compressed air at our disposal, we open the compressed air valve just sufficiently to give us a proper pressure to distribute the water thru the hose and into a three foot pipe. By this method we can reach into our trays, which are two feet wide and three feet deep, giving each tray a wetting of water at a constant temperature. By this method we produce the very finest sprouted oats, getting twenty to twenty-two pounds of green food from four pounds of oats in seven days. Beside the green food, the oats are in a perfect milky condition, which in themselves are most agreeable to the birds.

The greatest thing at Sunny Crest, however, is the introduction of the electric lights. We started experimenting with electric lights in December, 1915, and to tell of the results seems like a fairy tale. We first installed the lights in our No. 2 house consisting of five pens of pullets, with 100 birds to each pen. These particular pullets were the poorest ones we had out of 2100, the 1600 best ones being in our No. 3 house.

To make our test of far greater value, it happened that nature came along at this particular time with the coldest and bitterest weather of the entire year. Remember this—the 500 pullets in the No. 2 house in which we turned on the lights, were the weakest, smallest, and most unpromising of our entire flock. We greatly regretted that two pens, or 200 of the birds, we had not sold.

The No. 2 house in which we installed the lights was running an average of about 20 per cent production at the time we started the experiment. The No. 3 house was running between 35 per cent and 40 per cent at the same time.

Three weeks from the time we turned on the lights the production of the entire No. 2 house under the electric light

had soared to 65 per cent. Our No. 3 house with our finest birds sank to a production of 20 per cent.

It is needless to say that we immediately installed the lights thruout our entire plant. They have been used ever since with considerable profit. They have not only been used by the Sunny Crest Company but nearly everyone in and about East Aurora has installed the same light outfit.

This is our method of operating the lights. We have a small switch board which consists of a resistance on the back, and on the front of the board a series of five alarm clock snap switches. Whenever it becomes dark in the afternoon, the lights are turned on. At eight o'clock at night an alarm clock goes off and releases a spring switch which throws a light resistance into the current. From five to ten minutes later, the second clock throws in still more resistance. This dims the lights so that it makes it difficult for the birds to see enough to pick up food. From five to ten minutes later, the third clock throws in still more resistance, which brings the light down to a red glow, too dark for the birds to see anything except the roost and how to get to their place for the night. The fourth clock snaps the lights out for the night. At from five to five-thirty the next morning, the fifth clock throws the switch turning on all lights full strength, upon which the birds hustle off the roosts, reminding one of Niagara Falls, seemingly glad to get down and do some good hard work to get warmed up.

Many joking comments have been made on working the poor birds overtime. But what if you had to go to bed at half-past three or four o'clock on a winter afternoon, your food all digested by ten or eleven o'clock at night, and then you had to huddle yourself up as best you could until half-past seven or eight o'clock the next morning before you could see enough to work for your living, you would soon become discouraged with life, contract all diseases born of weakness, and fail to pro-

duce your share of the interests of life which you would otherwise produce if you were given the opportunity.

In the opinion of the writer, the results obtained from electric lights in a poultry plant are exactly and only what would naturally be expected.

More exercise, more feed,—especially dry mash—more water by almost treble, and there follows these results: better health, stronger constitution, greater strength, and lastly, the logical end of it all, namely, far greater egg production.

There is no question whatever in the mind of the writer so far as our experience has shown to date, that the effect of the electric light in the pullet year of the bird can be anything but of the very best. If it is true that the effect of the use of light is to give health and strength, it would naturally follow that it is good for the bird.

It is to be believed, however, from our experience of last year, that the electric light should not be used with breeders, that is yearlings from which breeding eggs are to be taken. Our reason for saying this, is that when we had considered our birds practically thru the molt last winter, we turned on the electric lights thinking that we would get them nicely speeded up for the breeding season.

There was no question in anyone's mind about the speeding up, as we jumped 800 breeders from a total production of 20 eggs per day to a total of over 400 in a period of less than three weeks.

When we started up our incubators, however, our egg production started to go down, and worse than anything else, our egg fertility was the lowest we have had for a number of years.

Special pens which were not under the lights, were just the reverse. This seems to point conclusively to the fact that we had overworked the breeders at a time when they were least prepared for standing the work.

The chicks which did hatch, however, were strong and healthy.

The writer would later like to go on with some points in regard to our business. It is desired to reiterate that those, who are now in or are contemplating going into the poultry business, should do so only under the advice and direction of experts whose life is devoted to the many problems of a very complicated and precarious business.

It, of course, is true to some extent that all poultry plants are a little different, but in the main there is not difference enough to warrant such fool things as feeding all corn because wheat is high or all wheat because corn is high. It is perfectly in order for a progressive operator of a poultry plant to try experiments of great value to himself and to everyone in general, but such experiments should be on small units and careful records kept of the results.

An instance of the above is a theory of the writer that some day we will see poultry plants with automatic temperature control, which with the use of the electric light, and careful growing of green food, will produce conditions almost identical with the months of the year in which the birds produce the greatest number of eggs.

The Sunny Crest Company have kept temperature records for the last three years, and we have studied the temperature effects on birds, as well as general climatic conditions. We found that the temperature seemed to be really the only controlling feature and that the effect of a change of temperature either way was noted on the sixth or seventh day following the change.

If we could now devise a poultry house with artificial circulation of air, big and roomy, where no air would come in except thru thermostatic control, the writer believes that this, combined with electric light and fine green food, would almost duplicate the egg production of the most ideal months of the year. After we have made a little more money, Sunny Crest proposes to perform an experiment of this sort, and the first ones to know of the result will be your own Cornell University.

## Sugar Savers

When we think of Chirstmas time,  
We think of candy too;  
We think of cakes and popcorn fine,  
Of Santa Claus and you.

But we all know we cannot have  
Sugar for our candy;  
Still now is not the time to rave,  
When other things are handy.

From karo syrup and molasses dark,  
We can, good candy make;  
So call your friends and bid them hark,  
It's all for freedom's sake.

With no wheat flour and sugar then,  
We bake our cookies brown;  
They suit alike all sorts of men,  
In country or in town.

So when you of these goodies eat,  
Be able then to say,  
I've saved some sugar and some wheat,  
Even on Christmas day.

M. G., '18.

### Apple Cherry Paste

2 cups pulp of apple  
1½ cups Karo syrup  
1 cup cherries  
½ lemon, juice and grated rind

Cut up the apples, leaving the skin on. Cook them to a pulp with just enough water to cover them. Put this thru a colander and boil the pulp for five minutes. Add the other ingredients and cook the paste until it is thick and clear. If a darker color is desired, a little vegetable coloring may be added. Spread the paste on a greased plate and when it is thoroly dry, roll it up in oiled paper.

### Peanut Molasses Taffy

2 cups molasses  
1 tbsp. butter  
2 tsps. vinegar  
1-3 cup chopped peanuts  
Vanilla

Cook the molasses, butter and vinegar without stirring it, to the crack stage. Turn it into greased pans and when it is cool pull it, working in the vanilla by rubbing some in the fingers while pulling. Cut the taffy into 2-inch pieces and roll them in the ground peanuts and wrap them in oiled paper.

### Soft Taffy

¾ cup Karo (white)  
¾ cup molasses

1½ tbsps. vinegar  
1½ tbsps. butter  
Vanilla

Cook the candy without stirring it to the crack stage. Turn it into a greased plate and when it is cool enough to be handled, pull it, working in the vanilla while pulling it. With scissors cut the taffy into desired lengths and roll them in oiled paper.

### Soft Taffy

½ cup molasses  
½ cup Karo syrup  
1 tbsp. vinegar  
½ tsp. soda  
1 tbsp. butter  
1 tsp. vanilla

Cook the ingredients to the crack stage. Pour it on a greased plate and when it is cool enough to handle, pull it.

### Peanut Bar

1 cup molasses  
½ cup Karo syrup  
½ cup sour cream  
1 tsp. soda  
½ cup peanuts

Boil the molasses, Karo, cream and soda to the hard ball stage. Add the nuts and turn the candy into a greased pan.

### Molasses Peanut Bar

1 cup molasses  
½ tsp. soda

- 1 tsp. vinegar
- 3 tbsps. sour cream
- $\frac{1}{2}$  cup peanuts

Cook the mixture until it forms a hard ball when it is dropped into water. Beat it until it is cool and then pour it over the peanuts in a greased pan.

#### Marshmallow

- 1 tbsps. powdered gelatin
- $1\frac{1}{2}$  cups Karo syrup
- 1-3 cup water
- 1 egg white
- salt
- 1 tsp. vanilla

Soak the gelatin in five tablespoons of cold water. Add the one-third cup of water to the syrup and cook the mixture to the hard ball stage. Pour this over the gelatin, beating it constantly. Add the egg white beaten stiffly, then add the salt and vanilla. Beat the mixture until it is very stiff and pour it on dish dusted with cornstarch. When it is cool cut it into squares and roll the marshmallows in cornstarch and sugar.

#### Chocolate Caramels

- 1 cup Karo syrup
- 1 square chocolate
- 3 tbsps. sour cream
- 1 tsp. vanilla

Cook the Karo, chocolate and sour cream to the hard ball stage. Add the vanilla and pour the mixture into greased tins. When cool mark the caramels into squares.

#### Molasses Kisses

- $\frac{3}{4}$  cup molasses
- $\frac{3}{4}$  cup Karo syrup
- 1 egg white
- 1 tsp. vanilla

Cook the molasses and syrup until it reaches the hard ball stage. Remove it from the fire. Beat the egg until it is stiff and pour the syrup slowly over it, beating constantly. Add the vanilla and beat until the mixture is stiff. Turn it into a greased pan and when it has cooled, cut it into strips and roll them in oiled paper.

#### Butter Scotch

- 1 cup Karo syrup
- 1 tsp. lemon extract
- 1-16 tsp. salt

- 1 tsp. vinegar
- 2 tbsps. butter

Cook the Karo syrup slowly until it is nearly to the caramel stage (149° C.). Add the remaining ingredients just before removing the syrup from the fire. Pour it into a greased tin and mark it into squares or drop it on waxed paper.

#### Butter Scotch

- 1 cup Karo
- 2 tbsps. butter
- 2 tbsps. vinegar
- 1 tsp. vanilla

Cook the candy to the crack stage and pour it into a greased pan to harden.

#### Fruit Paste

- $\frac{1}{2}$  cup chopped apricots
- $\frac{1}{2}$  cup chopped figs
- 1 cup raisins
- 1 cup Karo syrup
- $\frac{1}{2}$  lemon, juice and rind

Put all the ingredients on to cook and simmer the paste until it is clear and thick. Turn the mixture into greased plates and let it stand until it is cold. Cut it into cubes or strips and roll them in sugar or wrap them in oiled paper.

#### Apple Paste

- 1 cup apple sauce, (3 medium apples)
- $\frac{3}{4}$  cup Karo syrup
- $\frac{1}{2}$  lemon, juice and grated rind

Pare and slice the apples and cook them in water until they are tender. Put them thru a coarse strainer or mash them with a potato masher. Measure the sauce and to every cup add  $\frac{3}{4}$  cup of Karo syrup. Cook the mixture until it is thick, adding the lemon just before it is done. Pour the paste onto a greased platter to dry.

Variations: Two teaspoons of finely cut preserved ginger may be added with the lemon. Orange juice may replace the lemon juice. Chopped nuts may also be used.

#### Fruit Filling

- $\frac{1}{2}$  cup chopped raisins or figs
- $\frac{1}{2}$  cup boiled water
- Grated rind and juice  $\frac{1}{2}$  lemon
- $\frac{1}{2}$  cup Karo
- 2 tps. cornstarch

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# THE CORNELL COUNTRYMAN

FOUNDED 1903 INCORPORATED 1914  
NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY

H. S. SISSON	-	-	-	-	Editor
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W. C. ELDRIDGE	-	-	-	-	Manager
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EDITH RULIFSON	GERTRUDE SAMPSON

ITHACA, N. Y., JANUARY, 1918

SINCE the first sound of the war trumpet, *The Countryman* has been giving her best to Uncle Sam. Still she continues. With the declaration of war seven of her men left for military service. Later in middle summer the writer received the following letter from the editor-elect for this year:

"Today I enlisted in Maryland State Artillery, tomorrow we are to be mustered into Federal service, the day following we mobilize, August 15th we go to concentration camps in Alabama, and from there to fair France."

(Signed) RUSSELL LORD.

At this same time E. B. Sullivan wished to follow the same course. Believing that *The Countryman* has a field of service he remained for a time. In these few months he has placed *The Countryman* on a firm war basis. Now he has gone.

Today Eugene Sullivan and Russell Lord are drilling together in Company F, 110th Field Artillery, Camp McClellan, Alabama. If they serve Uncle Sam now, as they served agriculture formerly, they

will have done their part when this war is won.

With this issue, the board has lost another of its members—H. L. Creal. He enters a less spectacular field, but while Creal swings the ax, and feeds the stock, and plows and plants and hoes and harvests the crops, he may be assured that we know him as a sincere worker.

But as some leave, there are other conscientious workers ready to assume the responsibilities. William C. Eldridge '19, has been elected business manager to succeed Sullivan; and J. R. Fleming '21, H. P. Pabst '20, and L. A. Wuest '19, have been added to the editorial staff.

OUR food administration has undertaken a program the end of which cannot be seen. It began with assigning a certain value to a bushel of wheat. Whither this will lead us, no man knows. Only this we know, that once started it must continue. If wheat is worth a certain price per bushel, then corn must have a relative value, and with the price of corn fixed, the price of pork, which has been shown to depend upon the price of corn, must follow. Fix the price of pork, and you cannot avoid fixing the price of beef, mutton, chicken, and the majority of all farm products. Then comes the fixing of labor prices and perhaps the adoption of the eight-hour day system. Complications will heap up. They were bad in Germany and England. They threaten to be worse here.

The balance of prices is a most delicate matter. It has been automatically adjusting itself for ages. Now it is to be disturbed by man. According to the very laws of nature and of economics, complications must follow. The question arises, is man wise enough to assign cor-



rect relative values to all commodities? If the answer is "yes," let us continue in our program; if the answer is "no," let us stop to consider what we have done.

**J**UST what are the plans for the 1918 food crop? Does it promise to be larger or smaller? The government is making army, naval, and aerial plans for years in advance. Is it making similar food plans?

In the spring farmers are urged to grow larger crops; in the fall they hear of commissions being appointed here and there to consider lowering the price of this and that farm product. It is contrary to every law of economics for the two policies to work hand in hand.

Ask the farmer what his plans for next year are, and he answers, "More pasture and less crops." Right or wrong, this is the condition we face. If the policy of the government is right, it should use every possible means to show the farmer before it is too late to plant more crops.

The amount of crops the farmer raises is largely dependent upon the amount of labor he hires. The amount of labor he hires and the price he pays must be determined by the price he receives for his products. Last year the farmer produced. Let the government show the farmer, year in and year out, that it stands for increased production and he will continue to produce. Otherwise he will not.

If such commissions, sincere as its members may be, continue to be appointed—especially those in which the farmer does not seem to be well represented—they will antagonize the farmer and defeat the very purpose for which this nation should strive—increased production.

**A**RE you saving wheat, sugar, and fats? Is America conserving these foods? Answer the former question and you have answered the latter.

There are three possible ways for lessening the amount of these foods consumed. The first one is by informing the people that our wheat, sugar, and fats are needed by those who are bearing the brunt of the battle. We should hearken to this appeal. But have we?

The administration has used the second means of appeal. It has shown us that food conservation concerns our own national safety. Will we heed this call or must the government tell us how much of these foods we may eat?

When F. C. Wolcott visited Cornell he said, "If the United States eats and wastes her usual amount of wheat, we can ship to our allies 21,000,000 bushels of the 1917 wheat crop. But already we have shipped 34,000,000 bushels, which means that if we eat and waste this year as formerly, and ship no more abroad, the United States will be 13,000,000 bushels short next summer. And now France calls for immediate shipment of 100,000,000 bushels more."

Does not this statement by a man who knows, thrill us, or have we ceased to be moved? Let us cease gazing at those posters and posters and posters, and stop eating fats and sugar and wheat.

**P**ERHAPS it is a coincidence but we notice that issues of *The Countryman* containing articles by Professor J. E. Rice are all sold out.

**S**HALL we start 1918 with resolutions? By all means, yes. Now is the time to make them, but let's wait until December 31, 1917, before we publicly announce them.



## Campus Notes

### A Tractor School to Meet Demands

There is now considerable demand for men having special training in the operation of farm tractors. To satisfy this demand the rural engineering department will conduct a three weeks tractor school this winter. It is not expected that the course will turn out fully trained tractor operators since there necessarily will be little field work on account of the season. However, as much practice as possible will be given as well as a thoro understanding of tractor mechanism, care, and adjustment.

The course will last for three weeks, February 18 to March 9 and will be limited to 24 students. No tuition will be charged to residents of New York State. There will be two lectures a day, one in the morning and one in the afternoon, each followed by a three hour laboratory period in either the shop or field. Sessions will be held in the evening for study, reports, or conferences with the professors.

**Russell Lord** awarded the \$50 prize, **Wins Kermis Prize** offered for the best play written by a student of the College of Agriculture, to be produced at the Kermis entertainment given during Farmers' Week. Lord is now corporal, Company F, 110th Field Artillery, stationed at Camp McClellan, Anniston, Alabama.

The winning play, "They Who Till," was written at odd times at camp.

The play deals with the progress of country life in America, presenting episodes illustrating conditions when farming was a "gentleman's profession," followed by conditions during the period of agricultural depression, and finally the present conditions of agricultural rejuvenation.

### Special Emergency Course

The faculty has approved of a special emergency course in rural organization which will last about six weeks, starting at the beginning of the second term. The purpose of this course is to prepare men as emergency county agents and home demonstration agents. The course will consist of 30 lectures and 15 laboratory periods.

Late in November, the food conservation campaign for Tompkins County and the State of New York was opened by Dean A. R. Mann before an assembly in Roberts Hall. The Dean outlined the purposes of the campaign and greeted the members of the State Normal Institute College in behalf of the State College of Agriculture. In response to Dean Mann's greeting, Director Van Alstyne, of Normal College, briefly addressed the assembly. Besides this assembly, several lectures and conferences were held during the morning and afternoon of the same day. In the

evening Professor Flora Rose spoke on "Home Food Supply." She discussed particularly the milk situation. Professor Rose said, "No less milk should be used because the price of milk has risen one, two, or three cents a quart, for if less milk is used, less milk will be produced; farmers will sell off their dairy cattle because of the high cost of feeding them. Milk is, and will remain, in this country at least, the cheapest animal food. If the daily use of milk is cut down when the war is over, the country would be faced not only with a milk famine, but with a much higher cost of living, because the supply of all animal foods will be reduced. \* \* \* These facts must be faced squarely in order to protect this and other countries from such a calamity. To do this, use milk freely, not wastefully, for a good part of the animal food."

The program for Thursday consisted of lectures and addresses on home economic subjects, for practically every hour of the day.

To complete the series of conferences, on Friday night a mass meeting was held at Bailey Hall. F. C. Wolcott, the right-hand man of the Hoover administration, was the principal speaker of the evening. In his speech, he made the startling statement, "Unless food in increased quantities is sent to France within the next five or six weeks, the people of the cities of France will be facing starvation. \* \* \* Saving on food, so that all the more may be sent to our allies, is one of our hopes and the main basis for saving." In conclusion he said, "The entire responsibility of winning the war rests upon us. It cannot be won by England and France. We could not be peacefully here tonight if it were not for the glorious armies of France and the splendid navy of Great Britain. Now they are crying to us for food. What will our answer be?"

Following Mr. Wolcott, Miss Sarah Louise Arnold of Simmons College, a home economics leader as well as a col-

lege dean, spoke on the duty of the women in the work of the war. She mentioned the advantages of Tompkins County in this respect, on account of the aid given by the University, and concluded by saying, "The conservation campaign means an earlier ending of the war."

E. L. Baker and R. H. Chapin have been appointed county agricultural agents in Genesee and Schuyler counties respectively. Mr. Baker took up his duties in the early part of November, starting out with a membership of 1100 in the association. Mr. Chapin takes up his duties on January 1, beginning with a membership of 200.

The food conservation work which was carried on during the past summer has been turned over to the office of the state home demonstration agency which is under the leadership of Miss Florence Freer. Miss Claribel Nye has been added to the staff as assistant state leader of the 40 home demonstration agents now at work. Miss Bertha Titsworth and Miss Winifred Moses have been given leaves of absence by the home economics department in order that the work may be organized as soon as possible. The state home demonstration agency has its office in the home economics building.

Professor E. S. Savage of the animal husbandry department is helping the dairymen's league of New York State in making it more efficient in its work among the farmers. Professor Savage has prepared a ration for stock, which is being manufactured by a western feed company. The new ration will be distributed at once among the farmers and it is hoped that the conditions of the present milk situation will be greatly bettered since the farmers can make a larger profit by using this cheaper and more efficient ration.

Walter P. Cooke, '91, was recently elected to the Board of Trustees, to fill a vacancy in the Board made by the

death of George C. Boldt, '05. Mr. Cooke is a prominent man in Buffalo, being director of many organizations in and about the city.

The University canvass for the Y. M. C. A. and Y. W. C. A. War Work fund brought in a total of \$20,500. Altho this is a little short of the goal set by the campaign committee, the amount collected represents a much larger sum than has ever been raised among the undergraduates and faculty members of Cornell in any similar canvass.

Dr. Charles Thom, formerly the soft and fancy cheese investigator of the agricultural experiment station at Storrs, Connecticut, is now bacteriologist of the bureau of chemistry at Washington, D. C. He is now at the college working with Professor W. W. Fiske on a book which deals with cheese making. Dr. Thom is writing that part of the book which deals with soft and fancy cheeses.

Professor E. S. Guthrie of the dairy department has completed the manuscript of his book on *Butter*. He hopes to have it published before the beginning of the second term that it may be used in one of the second term courses. This book is one of the Rural Science Text-Books Series of which Dr. L. H. Bailey is the editor.

Professor Lawrence, formerly of the College of Civil Engineering, and now connected with the Aviation School here, met the Cornell Foresters November 28, and gave an instructive address on "The Qualifications of a Successful Aviator."

At the Christmas meeting which took place December 19, the Foresters had their annual Christmas tree and were entertained by various "stunts" given by members.

At the first business meeting of the Poultry Association the following officers were elected for the coming year:

E. H. Robison '18, president; K. N. Ehrlicke '18, vice-president; C. G. Seelbach '18, secretary and treasurer; R. V. O. DuBois '20, assistant secretary and treasurer; S. A. Tompkins '19 and D. D. Merritt '19, directors.

In an effort to inaugurate a campaign for the conservation of food at Cornell, and with the aim of aiding the Ithaca committee on conservation, three committees have been organized. Professor C. V. P. Young '99 is chairman of the executive committee. This committee has appointed two other committees, one for the men and the other for the women undergraduates. At their first meeting plans were made to enlist the aid of fraternities, cafeterias, and other organizations that might in any way be affected by the food conservation campaign.

A final session of the conferences of the city and county food conservation agents of the State of New York was held at the College of Agriculture in connection with the annual extension service conference. The fifty agents assembled passed a unanimous resolution to cut down their personal consumption of sugar to half a pound a week, or the equivalent of two and one-half teaspoonfuls a day. This action, taken on the part of these agents, serves as an incentive to those to whom the food conservation committees are directing their time and attention.

The inter-college basketball season opened on December 6, when our team played the architects. The architects were outclassed from start to finish, the final score being 51 to 4. Walter Knauss played a fast game for the Ag. team. He plays center and is considered as the find of the season. Our next game is to be played with the College of Law on January 5.

The eleventh annual fruit exhibit of the pomology department was held in Roberts Hall December 6-8. Apples,

(Continued on page 220)



## FORMER STUDENT NOTES



Warren I. Trask is a typical example of what Cornell men do upon graduation. Since 1916 he has been "following the plow," and is now owner of a one hundred and thirty-three acre farm, eighty of which are under cultivation. He is principally a poultryman, keeping about one thousand White Leghorns. Besides his poultry he has a small herd of cattle, a few of which are pure-breds. Last season Trask harvested wheat, oats, corn, barley, and buckwheat, which provide for his winter poultry feed.

Below is a photograph of his poultry house, constructed similar to the Cornell Poultry House Plan. Trask realized that one of the essentials for obtaining a large egg production is in keeping the hens contented. These conditions are obtained by providing sanitation, plenty of light and well distributed, a correct system of ventilation, and interior fixtures well arranged. Trask has followed the Cornell policy in not permitting any of the interior fixtures to occupy floor space.





'00, Sp.—Since leaving Cornell, A. L. Richie has cared for 90 acres of orchard besides being engaged in the cultivation of sweet corn. He has been spending considerable time in breeding and selecting, and was able to introduce a new variety of seed corn in 1912. He expects to introduce another this year. Richie is living at Branch Pike, Riverton, New Jersey.

'07, Sp.—Arthur P. Loewe is teaching agriculture in the high school at Blommer, Wisconsin. During the summer months he has charge of the home projects in agriculture.

'08, Sp.—Clyde M. Hall is now running his 170 acre farm at Perrysburg. He has a herd of grade Holstein cattle and is a member of a cow testing association.

'08, Sp.—Lester J. Wilson of Gainesville produced a crop of seed potatoes this summer of which he may well be proud. He is specializing in seed potato production and from the 40 acres which he planted last spring, he raised a total of 8500 bushels.

'09, B. S. A.—George W. Meyer is running a large hay and grain farm at Ovid. He has an Emerson 12-20 tractor and a Ford.

'10, B. S. A.—From 1911 to 1914, B. W. Gilbert was with the Bureau of Soils, United States Department of Agriculture. Since then he has been in charge of the Lackawanna County Farm Bureau, Scranton, Pennsylvania.

'11, B. S.—Floyd W. Bell took a year's graduate work at Ohio State University after leaving Cornell. He then went to Texas Agricultural and Medical College to work in the animal husbandry department. He is now professor of animal husbandry there.

'11 B. S.—S. G. Judd, formerly teacher of animal husbandry at the state school of agriculture at Cobleskill, has enlisted in the heavy artillery service and has gone to the training camp in Wisconsin.

'12, B. S.—J. D. King has left his position as manager of the Pine Lane Stock Farms at Middletown to take a position as manager of a 250 acre fruit farm at Port Jervis. A factory is operated in connection with the farm to utilize the inferior fruit produced on the farm.

'13, B. S.—Charles Paul Alexander recently married Miss Mable M. Miller of Lawrence, Kansas. Alexander was a former instructor in the department of entomology at Cornell and is now assistant curator of the Entomological Museum of Kansas. All send best wishes to "Chuck."

'13, B. S.—Wesley H. Bronson, until recently an assistant professor of farm management at the Massachusetts Agricultural College, is now in the Naval Reserve with the rank of Chief Yeoman. He is on duty at Squantum, Massachusetts, assisting in the inspection work at the new destroyer plant being constructed there.

'13, B. S.—Bertram W. O'Donnell, who was formerly engaged in the lumber business in Medina, is now with the 10th Engineers (Forestry), now in France.

'13, B. S.—L. W. Crittenden, who taught agriculture at the Cortland Normal School, is now teaching at Randolph.

'14, B. S.—J. F. Wilkin has been on his father's farm since leaving Cornell. The farm comprises 100 acres of tillable land and about 85 in pasture and woods. They keep about 25 head of grade Holsteins. They have experimented in growing soy beans with ensilage corn and have had marked success.

'14, B. S.—Ralph W. Green was married on Saturday, July 14 to Miss Charlotte Hilton at Fredonia. Green is an instructor in the extension department.

'14, B. S.—Miss L. A. Minns, instructor in floriculture at Cornell, spent her vacation on her father's farm at Lodi, Ohio, doing her bit as a farm laborer.

(Continued on page 224)

A PRIZE WINNING  
CREAM SEPARATOR

## THE DE LAVAL CREAM SEPARATOR

### Is a Winner!

### Why don't you let it win for you?

At the great national and international expositions, the juries have invariably acknowledged the superiority of the De Laval. They awarded the Grand Prize, the highest possible award, to the De Laval at the Panama-Pacific Exposition at San Francisco in 1915, as also at Buffalo, Chicago, St. Louis, Paris, Brussels, and all the great world expositions for more than 35 years.

What the world's greatest dairy experts, the men who operate the creameries and the big milk plants and dairies, think of the De Laval is best evidenced by the fact that 98% of the cream separators in use in such plants the world over are of De Laval make.

### DeLaval Produced Cream Makes Best Butter

Since 1892 the National Buttermakers' Association has held butter-scoring contests each year in connection with its Annual Convention, and at every such convention butter made from cream separated by a De Laval Separator has scored highest. This is a 100% record for the De Laval. No room for chance there. Only unusual merit made such a record possible.

Proof of the superiority of De Laval Separators and of De Laval produced cream has been piled up and multiplied so many times that it is no longer questioned. It is an accepted fact.

#### THE DE LAVAL SEPARATOR COMPANY

New York  
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EVERY NEW DE LAVAL HAS  
A BELL SPEED - INDICATOR



A PRIZE WINNING PRODUCT

Tell Advertisers Who Introduced You

### Wing Molt as an Indication of Production

(Continued from page 193)

#### Record of Observations Made on November 15, and the Actual Egg Record of the Birds

Legband No.	Estimated Production	Actual Production Nov. 1, 1916 to Nov. 15, 1917
D47	210	166
D145	140	169
D308	140	128
D350	160	144
D386	140	120
D401	130	121
D567	145	182
D581	90	77
D621	180	168
D633	120	99
D781	130	171
D790	140	134
D823	140	130
D833	60	136
D840	120	101
D843	130	156
D844	80	28
D853	150	188
D861	130	170
D865	160	137
D1080	160	178
D1245	180	174
D1262	120	128
D145	140	128
D1263	190	160
D1265	120	75
D1306	170	162
D1318	180	82
D1325	130	121
D1372	120	124
D1402	190	211
D1419	100	106

### A Standard War Poultry Ration

(Continued from page 195)

8 inches deep. The common straws, in their order of desirability, are wheat, oat, barley, rye and buckwheat; shredded or cut corn stalks, shavings or leaves may be used where straw is not available. All feed and litter should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from these

sources due to the spores which may develop into fungus molds in the lungs or intestines.

**Green Feed:** A green range of alfalfa, clover or grass furnishes the ideal condition. When these are not available it is necessary to give the birds some kind of succulent food. Mangel beets, cabbage, sprouted oats or green clover are usually considered the best green feeds. If these are not obtainable, apples and potatoes make a valuable addition to the ration. Feed at noon in such amounts as the birds will clean up before night. This will require about 25 to 30 pounds per week for 100 hens. Decayed or frozen green feeds should not be used as they are a common source of digestive disorders.

**Grit and Oyster Shell:** Hard, sharp, grit is necessary for grinding feed; oyster shells supply lime for egg shells. Neither will replace the other.

**Water:** One dozen eggs contains 1 pint of water. Clean, fresh pure water should be kept constantly before the hens and should be renewed at least once daily.

**Moist mash:** Feeding moist mash is recommended only to hasten the development of late hatched pullets, or to help in keeping up egg production of hens in late summer, especially of those hens which are not to be used for breeders the following spring.

**Breeds:** This ration is recommended for all breeds but it is to be varied as to the method of feeding. In the case of heavier varieties, feed more scantily of grain in the morning and so encourage exercise.

**Substitutes and additions:** All substitutions or changes in the ration should be made gradually.

Shrunken or feed wheat is recommended in place of milling wheat because the latter is needed for human consumption. In nutrient value, feed wheat is between milling wheat and wheat screenings.

Wheat screenings are often loaded with weed seeds and dirt, but good

(Continued on page 214)

# Once for All *IRON AGE*

## Potato Machinery Answers the Farmers' Big Questions

Undoubtedly, the biggest question of all is: "How can I cut the cost of production?" Labor is scarce and more costly than ever before. Let Iron Age Potato Machinery come to your aid. They make the most of high-priced help and reduce production costs.

**100% Potato Planter** plants entirely by machine yet provides for correcting doubles and misses. It saves one to two bushels per acre—some say a barrel. And, it insures a perfect stand. With or without fertilizer attachment and with choice of furrow openers—two styles.

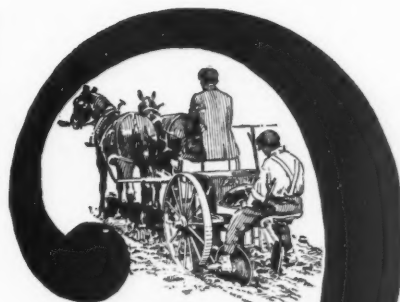
**Iron Age Two-Horse Riding and Walking Cultivators** make intensive cultivation easy. We make both one and two-row machines, pivot or fixed wheels, for level or rolling country or side hills.

**Iron Age Traction and Power Sprayers:**—Our new ten-row Engine Sprayer is a great time and labor saver. Engine is interchangeable for Iron Age Engine Digger. Also four and six-row Traction Sprayers without engine.

Iron Age Potato Diggers reduce the cost of digging, especially when the Engine Digger is used. They get every tuber. The Engine Digger works readily in either sandy or heavy clay soil, or in soil choked with crab grass and green vines. Automatic throw-out-clutch prevents breakage. Iron Age Diggers may be had in four styles—one will serve your purpose.

Write today for booklets describing Iron Age Potato Machinery.

**Bateman M'f'g Co.**  
Box 3054 Grenloch, N. J.

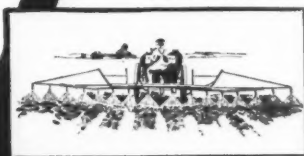


100 PER CENT  
POTATO PLANTER  
Never misses—Never doubles

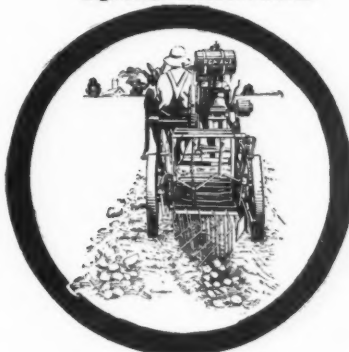



No. 78 Riding  
Cultivator

ENGINE SPRAYER  
We also make four and  
six-row sprayers



ENGINE DIGGER  
Digs faster—saves two horses





**Persistent Production**  
—is a—  
**Characteristic of the Breed**

A Two Year Old Heifer in New York produced in one year 712 pounds of butter fat and 12,270 pounds of milk, besides giving birth to a vigorous calf a month after the completion of record.

Write for the "Story of the Guernsey Cow"  
**American Guernsey Cattle Club**  
Box V Peterboro, New Hampshire

## Once Over!

Think of what this means in saving of time and labor. You get a better seed-bed too, by using the famous

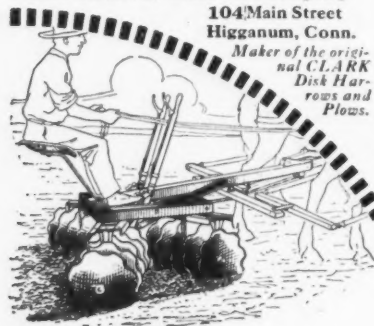
### **Cutaway** Double Action (CLARK) Disk Harrow

The rigid main frame makes the forged disks double cut, pulverize and level the ground. Closehitch. Lightdraft. All sizes.

Write for book telling how to raise better crops with less cost. "The Soil and Its Tillage," it's free, also new catalog. Ask for name of nearest dealer.

#### **The Cutaway Harrow Company**

104 Main Street  
Higganum, Conn.



## A Standard War Poultry Ration

(Continued from page 212)

screenings may be used if the price is low enough.

Mustiness in feed wheat, wheat screenings or any feed may be detected by taste or odor. The odor is made more apparent by the application of heat. Hold the sample in the closed hand for a few minutes or pour hot water on the sample. Musty feeds are dangerous. (See Litter.)

Green cut bone is a very stimulating feed and should be used with care. It is not safe to feed unless it is fresh. If fed in amounts of about one-half ounce per hen per day, it may be used to replace half of the meat scrap.

Clover chaff, either dry or steamed, is relished by the hens and may be advantageously used to add variety to the ration.

## Rural Dramatic Extension

(Continued from page 198)

Massachusetts, like Cornell, has offered a prize for the best play on a country life subject to be written by an agricultural student. Maine does general extension thru their Masque, often touching upon country towns. They find in *The Day that Lincoln Died* a New England one-acter of tremendous appeal. Ohio has had Farmers' Week plays. Illinois gives unofficial assistance to rural plays when called upon. Missouri, Colorado, and Maine contemplate definite rural extension in dramatics as a possibility of the near future.

And now, his report ended, the writer wants to indicate very briefly and with genuine respect for those who have bravely started a great work, the matter in which he is to take issue with some of them in a next and absolutely last installment. It is simply the notion that people do not go to plays and entertainments to "learn valuable lessons," and against outbranching efforts to build up a real rural drama on such a basis.





# An egg laid for every yolk made

Most hens lay less than half of the yolks that are formed because the white elements are lacking in the grain feed they eat.

Based on the records of one of the most prominent State Experiment Stations, where National laying con-

tests are conducted every year, and where they use Purina Poultry Feeds, it is shown that

Wheat, corn, oats, barley, and kafir contain (above bodily maintenance) an average of 224 yolks and **ONLY 154 WHITES.**

Not only the deficiency of whites means fewer eggs, but the excess yolks (which are absorbed by the hen's system) form fat which also cuts down egg production. Note the perfect balance and the large quantity of white and yolk elements supplied by Purina rations:

	Yolks	Whites
Purina Chicken Chowder	182.05	282.55
Purina Scratch Feed	247.49	142.11
	<u>429.54</u>	<u>424.66</u>

Purina Chicken Chowder and Purina Scratch Feed are scientifically balanced to produce the greatest number of yolks and whites with the least waste energy.

## FEED THIS PERFECT BALANCE

Feed 100 lbs. of Purina Chicken Chowder to each 100 lbs. of Purina Scratch Feed and you will actually use less feed and get more eggs.

Write for further particulars. Address

**Ralston**  
**Purina Mills**

St. Louis, Mo.

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Tell Advertisers Who Introduced You



**HOISTING**  
A heavy load—but safely hoisted by Columbian. Whether it's for your hay fork, or any other purpose, specify strong, sturdy—

**COLUMBIAN Manila Rope**

You will get continual service and constant satisfaction, too, for like Columbian Binder Twine, it's made carefully by expert workmen—from the highest grades of fibre obtainable. Tell your dealer you want Columbian—insist on getting it.

**COLUMBIAN ROPE COMPANY 140-70 Genesee St. AUBURN "The Cordage City" NEW YORK**  
Branches: New York—Chicago—Boston




¶ The fact that about 70% of chick deaths are caused by indigestion proves the importance of our special steam-cooked process. For it dextrinizes part of the starch in the grain, reduces the moisture,—and makes it ready for easy digestion and quick assimilation as no other method can.

¶ And if you will try H-O Steamed-cooked Chick Feed you will find its cost practically negligible in the light of the time and the bother and the worry it saves,—in the light of the lives it saves, and the large, robust, healthy chicks it produces.

¶ Is it really good economy for you to mix your own chick feed?

*Samples and descriptive folder on request*

**THE H-O COMPANY**  
Feed Dept., Buffalo, N. Y.  
Members U. S. Food Administration  
**J. J. CAMPBELL, Eastern Sales Agent**  
Hartford, Conn.

### Sugar Savers

(Continued from page 203)

#### Sugarless Molasses Cake

- 1½ cup molasses
- ½ cup fat
- 2 eggs
- 1 tsp. ginger
- 1 tsp. soda
- 1 cup boiling water
- 2½ cups rye flour
- ¼ tsp. salt

Mix molasses, fat and eggs. Sift dry ingredients and add to mixture. Bake in a moderate oven from 30 to 40 minutes.

#### Molasses Cake

- 1½ cups molasses
- ½ cup fat
- 2 eggs
- 1 tsp. ginger
- 1 tsp. soda
- 1 cup boiling water
- 2½ cups rye flour
- ¼ tsp. salt

#### Buckwheat Cookies (Spiced)

- ½ cup fat
- 1 cup Karo
- 1 egg
- ½ tsp. cinnamon
- 1 cup cloves
- 2¾ cups buckwheat flour

#### Apple Sauce Cake

- 3 cups of apple sauce (not sweetened)
- 1 cup fat
- 2 cups molasses
- ½ tsp. cloves
- 1 tsp. nutmeg
- 1 tsp. cinnamon
- 1 cup raisins
- ½ cup nuts
- 2 tsps. soda

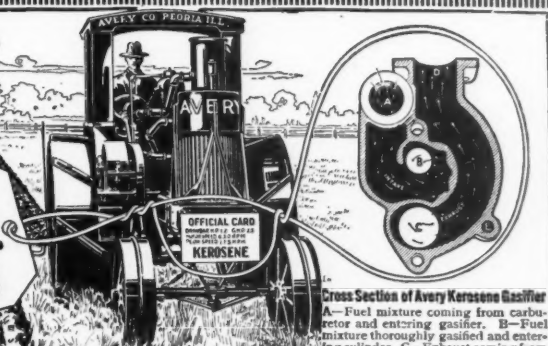
#### Apple Sauce Variation

Make two cups of cooked apple sauce and mash. Add one tablespoon butter. Sweeten with three tablespoons Karo and add cinnamon to taste. Spread over bottom one-half inch thick. Pour molasses cake over sauce and bake. Should be cut in squares and served warm.

(Continued on page 218)

Say Where You Saw It When You Write

Officially Inspected  
Sealed and Passed as  
**KEROSENE  
BURNERS**



**Cross Section of Avery Kerosene Gasifier**  
A—Fuel mixture coming from carburetor and entering gasifier. B—Fuel mixture thoroughly gasified and entering cylinder. C—Exhaust coming from cylinder and heating intake wall. D—Exhaust exit. E—Fuel heater.

## A Wonderful Invention

### Avery Gasifier—Turns Kerosene Into Gas

**W**E have discovered the way to burn kerosene more successfully than it has ever been done before in a tractor. Avery Tractors burn *all* of the kerosene instead of wasting part of it on account of it not being fully vaporized. Avery Tractors burn kerosene so successfully that we are able to use the lubricating oil over and over again instead of using it only once and then wasting it. Avery Tractors don't just run on kerosene—they burn *all* of it.

Avery Tractors are equipped with double carburetors. The motor is started on gasoline and when it warms up you pull the lever and switch over to kerosene without having to make a single adjustment of any kind.

But while a carburetor will mix gasoline with air and form a gas, no carburetor has as yet been designed which will successfully handle kerosene. We accordingly place on each cylinder head of an Avery Tractor our Duplex Gasifier, which takes the mixture of kerosene and air as it comes from the carburetor and so reduces the particles of kerosene and mixes them with the air as to form a gas that burns more successfully than kerosene has ever been burned before.

Avery Tractors are the only tractors with a double carburetor and duplex gasifier fuel system.

The official cards used at the 1917 National Tractor Demonstration. Averages are the Tractors that burn **ALL** the kerosene.

#### The 1917 National Tractor Demonstration Proved Avery Tractors to be Real Kerosene Burners.

The rules of the demonstration were that a tractor which burned kerosene was allowed only 5% as much gasoline as kerosene for starting. Avery Tractors did more.

—They burned kerosene without calling for any more gasoline for starting during entire week than the 5% allowed for the first day's filling of kerosene.

—They burned kerosene without a lot of black smoke coming out of the exhaust—without kerosene passing the pistons and cutting the lubrication—the oil in the crank-case did not have to be changed. A couple of sizes Avery Tractors even burned distillate.

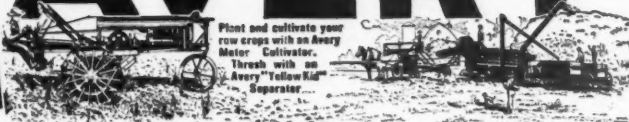
### Get all the Facts

There is a size Avery Kerosene Tractor to fit every size farm—six sizes, from 5-10 to 40-50 H. P. There is also a size Avery Tractor Plow and a size Avery Thresher to fit every size tractor. Write for a free copy of the new 1918 Avery Catalog and get *all* the facts.

**AVERY COMPANY, 4703 Iowa St., Peoria, Ill.**

"Branch Houses and Distributors Covering Every State in the Union"

# AVERY



Plant and cultivate your row crops with an Avery Motor Cultivator. Thresh with an Avery "Yellow Kid" Separator.

**Highest Winning Butter is Colored  
The Rich Golden June Shade**

by

**Chr. Hansen's Danish  
Butter Color**

The Color that does not affect the Finest Flavor or Aroma of first-class butter.

Chr. Hansen's Laboratory, Inc., are also headquarters for:

Rennet Extract and Pepsin substitutes for same, Rennet Tablets and Cheese Color Tablets, Liquid Cheese Color, Lactic Ferment Culture, etc.

**CHR. HANSEN'S LABORATORY,**  
Incorporated,

Little Falls, N. Y.  
Western Office, Milwaukee, Wis.

**Even in Peace Times**

the Burrell (B-L-K) Milker pays for its cost in less than a year by the labor wages and labor-keep it saves. Now when labor is doubly scarce, doubly expensive and food is double in cost the Burrell Milker will double its saving.



**BURRELL (B-L-K) MILKER**  
Good for the Herd

One man operating two 2-cow Burrell Milk-ers does the work of three hand milkers. The Burrell Milker lasts for years of profit-able, easy and healthy milking.

Let the users give you their experiences. Write for their testimonies and descriptive booklet.

**D. H. BURRELL & COMPANY**  
503 Albany Street, Little Falls, N. Y.

**Sugar Savers**

(Continued from page 216)

**Molasses Cake with Dried Apple**

1½ cup molasses

½ cup fat

2 eggs

1 tsp. ginger

1 tsp. soda

1 cup boiling water

¼ tsp. salt

2½ cups rye flour

½ cup dried apple added to batter

Mix three and three-fourths cups rye flour with one-half teaspoonful salt.

**Peanut Butter Cookies**

1 cup molasses

¼ cup peanut butter

6 tsps. fat

¼ cup sour milk

½ tsp. soda

1 tsp. baking powder

3¼ cups rye flour or flour to make dough

It will be stiff enough to roll. Shape with small cutter and bake in moderate oven.

**Cookies Cocoanut (Drop)**

1 cup molasses

¼ cup sour milk

1-3 cup fat

1 egg yolk

¼ tsp. soda

1 tsp. baking powder

1-3 cup cocoanut

½ tsp. salt

2½ cups rye flour

Whole recipe makes 72 cookies.

**Cocoanut, Karo, Cornmeal and Rye  
Flour Drop Cookies**

1½ cup Karo syrup

¼ cup sour milk

1-3 cup fat

3 cups rye flour

¾ cup corn meal flour

Yolk of one egg

½ tsp. soda

1 tsp. baking powder

½ tsp. salt

½ cup soaked cocoanut

½ tsp. vanilla

This recipe makes about 48 medium cookies.

## John Deere Special Factories Build Distinctive Implements

The House of Deere as it stands today is a great family of John Deere factories, each organized to a high point of practical efficiency to produce a certain group of farm implements for contribution to the John Deere Line.

It was to insure the permanency and merit of this Line that the John Deere family of factories was brought together under a permanent charter.

Around the great specialized factories which John Deere himself had founded and developed were gathered a number of other factories, each of which had pioneered in the production of some leading implement and stood pre-eminent in its particular line.

Each of these factories still operates under its policy of specialization. Each still produces the kind of tools that first made it famous. Each has connected with it men whose ingenuity, foresight and industry made it far-famed among dealers and farmers. Each preserves its old identity.

But each is dominated by the purpose that unites all—to maintain the premiership of the John Deere farm implement line.

All John Deere farm implements are made in John Deere factories owned by the John Deere company. This arrangement insures and guarantees for every tool produced the superior quality that has marked John Deere farm tools for eighty years.

### The John Deere Line of Farm Implements

Steel Plows  
Chilled Plows  
Tractor Plows  
Disc Harrows  
Smoothing Harrows  
Spring-Tooth Harrows  
Grain Drills  
Grain Seeders  
Lime Sowers  
Corn Planters  
Cotton Planters  
Beet Tools  
Cultivators  
Mowers  
Sulky Rakes  
Side Rakes  
Hay Loaders  
Stackers  
Grain Binders  
Corn Binders  
Hay Presses  
Kaffir Headers  
Manure Spreaders  
Grain Elevators  
Corn Shellers  
Farm Wagons  
Mountain Wagons  
Trucks  
Teaming Gears



Tell Advertisers Who Introduced You



**Don't Think Only of Scale**  
when you think of  
**"SCALECIDE"**  
it is all there is to  
**Dormant Spraying**

Does *all* that any other spray will do—but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dormant season—and invigorates your trees—and costs no more. *Read our money-back proposition* before ordering anything else.

Send for free booklet,  
"Profits in Fall Spraying"

**B. G. Pratt Co., Mfg Chemists**  
50 Church St. Dept. 30 New York



America's  
Pioneer  
Dog Remedies

Book on  
**DOG  
DISEASES**  
AND HOW  
TO FEED

Mailed free to any ad-  
dress by the Author

**H. CLAY GLOVER COMPANY, Inc.**  
118 WEST 31st STREET NEW YORK

### Campus Notes

(Continued from page 208)

pears, quinces, tropical and subtropical fruits were on display each day of the exhibit. Fruit growers in various parts of the state contributed fruit to the exhibition, and in addition, individual growers, granges, farm bureaus and experiment stations sent in exhibits.

The students of the college did all of the work connected with the exhibit, placing the fruit on display, judging, and awarding the prize ribbons. At the close of the exhibit the specimens were used for laboratory purpose in connection with the course in fruit varieties and judging.

Mr. Hardenburg, of the department of farm crops, has been appointed secretary of the New York State Potato Association. The eighty members of the association are located in thirteen different counties of the state. They are all actively engaged in the growing of certified potato seed for the improvement of the potato crop.

The department of farm crops has three new assistants this year; all of whom are taking graduate work in the college. They are W. C. Jensen of the University of California, G. K. Middleton of the North Carolina State College and C. P. Blackwell of the Texas Agricultural College. (Continued on Page 222)



### USE NATCO DRAIN TILE

Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous **NATCO IMPERISHABLE SILO**, Natco Building Tile and Natco Sewer Pipe.

**National Fire Proofing Company - 1136 Fulton Building, Pittsburgh, Pa.**



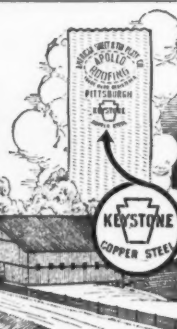
# Apollo

Full weight—  
Galvanized—  
Roofing and Siding

Both farm and city property owners need to know  
the absolute safety and service of metal roofing.

APOLLO-KEystone Galvanized insures durability and satisfaction for all forms of sheet metal work, including Culverts, Tanks, Flumes, Spouting, Garages, etc. Sold by leading metal merchants. KEystone Copper Steel is also unequalled for Roofing Tin Plates. Look for the Keystone added below regular brands. Send for free "Better Buildings" booklet. **AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.**

Tell Advertisers Who Introduced You



# THEY WHO TILL

---

An original play upon the progress of country life in America will be presented by the students of the New York State College of Agriculture at the

## ANNUAL KERMIS

---

This play, written by Russell Lord of the class of 1918, marks a departure in student enterprise and aims at the development of a rural dramatic expression in New York State

It is written, staged, and acted by the students for the benefit of the fund for various student activities, and for the entertainment of Farmers' Week visitors

---

## BAILEY HALL

TUESDAY, FEBRUARY 12, 8 P. M.

Admission, 25 and 35 cents

## Convert Your Rough Feeds Into Milk

Different kinds of roughage vary widely in nutritive value, especially protein, one of the chief elements of milk albumen, but all of the digestible nutrients contained in the roughage including protein are worth pound for pound just as much as those which are bought in concentrated feeds.

Much waste has been and is now incurred on Dairy Farms due largely to lack of attention to the quantity and nutritive value of the daily mess of roughage which is fed, and the failure to economically combine and proportion it with the concentrated feeds which are purchased. For example, if the roughage is low in protein, we should buy more protein in the concentrates, if on the other hand the roughage used is high in protein and low in carbohydrates, we should buy carbohydrates to balance them and not more protein which would be wasted.

It is to stop this loss and to economically combine the concentrates with the roughage grown on the farm so that the nutrients of both may be utilized that TIOGA DAIRY FEEDS are made in three brands, viz: Red Brand, White Brand and Blue Brand, each to fit a particular class of roughage. Feeding tables specifying quantities of every commonly grown roughage and the kind and quantity of TIOGA DAIRY FEED to be fed with it for most healthful maintenance and economical milk production, is contained in every bag of TIOGA DAIRY FEED or may be had for the asking.

The basic principle of economy in the use of feeds which will combine properly to render available the milk producing elements contained in the roughage grown on the farms, has never been questioned.

We guarantee TIOGA DAIRY FEEDS to be satisfactory when fed according to instructions. The principle on which they are based is correct. Why not ask your local dealer for a trial order, or write us for further particulars?

**Tioga Mill & Elevator Co.**  
Waverly, N. Y.

### Campus Notes

(Continued from page 220)

Eight students and K. J. Seulke of the animal husbandry department made a trip to Chicago during the week of December 2-10, where they visited the International Live Stock Show. When not visiting the show, they observed several of the largest and most well-known slaughter and packing houses in the city.

At a meeting of the Round-Up Club, held in December, the 1918 Farmer's Week Committee was chosen as follows: J. C. Maddy '18, in charge of feeds; R. G. Eastman '19, lunch room; D. G. Card '19, horses; G. Davison, cows; S. R. Farley '18, sheep; H. L. Creal '19, posters and advertising. It was decided to continue the holding of a lunch room in the animal husbandry building as formerly. The possibility of showing sheep as well as the other stock was also considered.

The College of Agriculture walked away from the other colleges in the annual intercollege cross country race held the last Saturday in November. The weather was typically Ithacan with a blinding snow falling, which added much to the sport.

The Department of Pomology has lost another man in the person of D. B. Carrick, until recently an instructor in that department. Mr. Carrick has accepted a position in the office of the Bureau of Markets, in the Division of Cold Storage and Transportation of the United States Department of Agriculture. His special work is to study the preserving and canning of fruits and vegetables by a new method. This method consists in freezing the fruit solid and very rapidly. Then when needed, it is thawed out quickly and is ready for use. It is claimed that this method is more satisfactory and is also correspondingly cheaper than the old methods of canning and preserving.

Say Where You Saw It When You Write



## LIGHT AND POWER

The DYNETO Farm Lighting and Power Plant is the most efficient and compact outfit offered to the American farmer today. Electricity and power have become a necessity to the modern farmer. They mean economy and labor saved.

### DYNETO DOES DOUBLE DUTY

*The DYNETO lights your home, barns and outhouses and furnishes electricity to operate your vacuum cleaner, electric iron or fan.*

*The DYNETO runs your separator, churns the butter, milks the cows and washes the clothes without electricity.*

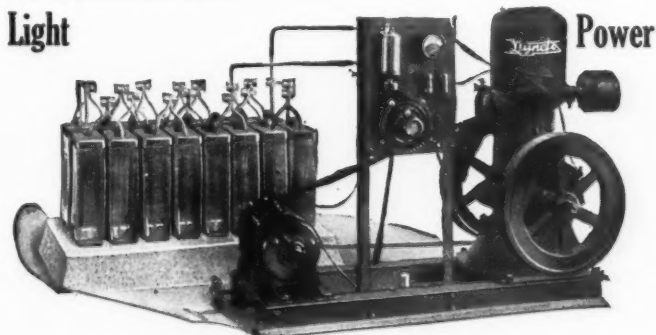
The DYNETO Light and Power Plant is the most economical, dependable and durable outfit furnishing both Light and Power.

The DYNETO ENGINE is the type with which every man on the farm is familiar. If you already have an engine you can save the difference in cost by buying a plant—less engine.

The DYNETO GENERATOR and SWITCHBOARD are of the highest quality and fully guaranteed.

The DYNETO BATTERY capacity is much larger than any other plant at the price, giving you a steady light for a longer time without recharging.

We could make a cheaper plant but not a better one. Write for further particulars. Fill out the coupon and mail it now.



DYNETO DOES DOUBLE DUTY LIGHT AND POWER

**DYNETO ELECTRIC CORPORATION**  
WOLF STREET, SYRACUSE, N. Y.

Please send me booklet and full information about Dyneto Light and Power Plants with prices.

NAME..... ADDRESS.....

Tell Advertisers Who Introduced You

**Former Student Notes**

(Continued from page 210)

'14, B. S.—Thomas Conway, assistant professor of poultry husbandry at Texas Agricultural and Mechanical College, College Station, Texas, was married early last June, to Miss Wilhelminia Braatz of Bryan, Texas.

'14, B. S.—T. O. Gavitt is working a seventy acre farm near Plainfield, New Jersey. He intends to specialize in poultry. Last spring he started with 1000 white leghorn chicks. Gavitt has all the essential up to date farm home equipment including a "Ford," electric lights and water system. His equipment saves him enough time to permit him to hold down a position in New York City as a side line.

'14, B. S.—Max F. Abel, formerly assistant in the farm crops department at Cornell, has been appointed instructor in agronomy at the Connecticut State College of Agriculture at Storrs, Connecticut.

'14-'15, W. C.—Wallace B. Hewett, who had been superintendent of the Lake Placid Club's Intervale Farm for nineteen months, became superintendent of Hurricana Farm at Amsterdam last March. This farm comprises 850 acres of which 650 are tillable. It carries 75 horses and 84 steers. Oats, hay and corn are his most important crops but he also grows potatoes and peas. This year he raised 40 acres of corn and 100 acres of oats.

'14, B. S.—Cedric H. Guise worked during the past summer for the New York State Conservation Commission, examining lands in Essex County to be purchased by that commission for the state.

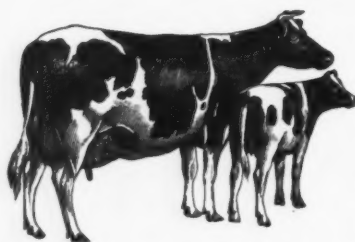
'14, B. S.—H. F. Benton, who taught agriculture at Newark Valley, now occupies a similar position at Pleasantville, New Jersey.

'15, B. S.—Henry V. DeMott, who is an assistant in pomology at Cornell,

(Continued on page 226)

***The Modern Cow is a Milking Machine***

The more raw material a machine can handle, the more finished product it will turn out

**PURE BRED HOLSTEIN COWS**

are anatomically constituted and developed to transmute large quantities of feed into large quantities of milk.

The student finds the explanation for the Holsteins enormous production in the large capacity for assimilating feed; the capacious udder, extremely large mammary veins and the general physical contour.

The Holstein is the most efficient milk milking machine.

Write for free, detailed information about "the profitable breed"

**The Holstein-Friesian Association of America**

Box 196, Brattleboro, Vt.





**How to  
Feed  
RED COMB  
Chick Mash  
with  
Buttermilk**

Feed pure drinking water only for 48 hours after chicks are hatched. Then feed Red Comb Chick Mash with Buttermilk in its original form—do not mix with any substance or liquid. Keep chicks supplied with pure water at all times.

**Save Baby  
Chicks and you  
Save Dollars**

**T**HE sturdy growth of your fowl; the quantity of eggs and the very life of the bird depends on careful feeding in the early stages. If your hatches do not strike the highest percentage of development you are not only losing the money so far invested, but you are killing your chances for success and the dollars that can be easily obtained from marketing your eggs and birds. Certain of the tremendous feeding value in Buttermilk for baby chicks, and sure of its preventive properties against

disease, we now offer poultrymen the greatest starting food on the market, Red Comb Chick Mash with Buttermilk—backed by the Red Comb standard of Purity. And you'll find it most economical if the directions are carefully followed.

Experienced Poultrymen know that improper feeding in the early stages hardens and toughens the flesh and considerably handicaps the chances for later success when the birds should be in their prime. With Red Chick Comb Mash with buttermilk you don't take chances or run the risk of internal disorders to which young chicks are especially liable.

Order a sack of Red Comb Chick Mash with Buttermilk today and protect yourself against this great loss.

**Guaranteed Analysis**

Protein	16%	Crude Fibre	9%
Fat	4%	Carbohydrates	50%

Contains Corn Feed Meal, Old Process Oil Meal, Barley Flour, Dried Buttermilk, Alfalfa Leaf Flour, Oat Flour, Wheat Middlings, Dextrose, and not over 1 per cent Calcium Carbonate and one half of 1 per cent salt.

**Hales & Edwards Co.**  
**Poultry--- Dairy--- Horse Feeds**  
**327 S. LaSalle St., Chicago, Illinois**

Say Where You Saw It When You Write

## When you judge a milch cow

you consider among other  
points the quantity and  
quality of her milk.  
Check up the results of

**Wyandotte**  
*dairymen's*  
**Cleaner and Cleanser**

in the same way. Consider how much cleaning a little of it will do. Then test and determine how well it does it, and you will readily appreciate why Dairy Colleges and Dairymen the country over say, "The habit of using Wyandotte Dairymen's Cleaner and Cleanser is a profitable habit."

This cleaner is guaranteed to give you satisfactory service, or costs you nothing.

Order from your supply house.

**IT CLEANS CLEAN**

Indian in Circle



in every package

**The J. B. Ford Co., Sole Mnfrs.**  
Wyandotte, Mich.

### Former Student Notes

(Continued from page 224)

spent the summer at Canandaigua working on the control of vegetable and fruit diseases.

'15, B. S.—Robert D. Edwards, who was assistant in the farm course while here at Cornell, is now office manager of the W. Atlee Burpee Co. of Philadelphia.

'15, B. S.—Stanley Coville is now superintendent of stocks of the W. Atlee Burpee Co. of Philadelphia.

'15-'16, W. C.—A. E. Jenkins was in Tompkins County's first quota of fourteen men for the national army. He left Ithaca, September 5, for Camp Dix, Wrightstown, New Jersey.

'15, B. S.—Henry V. DeMott, who is an assistant in pomology at Cornell, spent the summer at Canandaigua, working on control of vegetable and fruit diseases.

'15, B. S.—J. S. B. Pratt, Jr., after having spent two years in the Hawaiian Sugar Planters' Experiment Station experimenting with sugar cane, entered the Reserve Officers Training Camp at Schofield Barracks last August. His home address is post office Box 686, Honolulu, Hawaii.

'15, B. S.; '16, M. S.—F. A. Roper, after working all summer with the State Food Commission, accepted a position with the States Relations Department of the United States Department of Agriculture.

'15, W. C.—J. J. Steacy is now farm superintendent of the Schoharie State School of Agriculture at Cobleskill. He is overseeing the cultivation of 95 acres of general farm crops and the care of 600 chickens and 18 head of pure bred cattle. Previous to this, Steacy was a sanitary inspector for the New York Board of Health and was connected with a coöperative cheese plant in western Pennsylvania.

(Continued on page 228)

Say Where You Saw It When You Write

**Save Your Corn---Feed Buffalo Corn  
Gluten Feed with Your Home Grown Roughage or  
with Carbohydrate Commercial Feed to Produce  
the Most Milk at the Lowest Cost**



THERE is more digestible nutriment in a hundred pounds of Buffalo Corn Gluten Feed than in a hundred pounds of linseed oil meal or cotton seed meal.

You will find the *successful* dairyman feeding Buffalo Corn Gluten Feed—because they can safely feed two or three times as much in the ration—produce *more milk*—and *sell their corn for more per ton than the cost of this feed*.

A COMPETENT AUTHORITY STATES THAT IF THE FARMER COULD GET ALL OF HIS GRAIN FEED OR CONCENTRATES FOR NOTHING IT WOULD REDUCE THE PRICE OF MILK ONLY 1½ CENTS PER QUART.

Buffalo Corn Gluten Feed mixed with wheat bran, middlings, or other light feeds of similar character, three parts to one part of the light feeds, will give you a ration which will produce a maximum amount of milk at a low cost.

*See the Buffalo Corn Gluten Feed Dealer  
He is a good man to know*

**CORN PRODUCTS REFINING COMPANY**

17 BATTERY PLACE

NEW YORK

## It Takes Two to Make a Bargain

**YOU** have what we want---  
Poultry, Eggs, Calves, Lambs, Etc.

**WE** have what you want---  
Capital, Experience, and a Good Outlet

SEND US YOUR NEXT SHIPMENT AND LET US CONVINCE YOU

**FARMERS' COMMISSION HOUSE**

INCORPORATED—CAPITAL \$80,000

**27 Harrison Street, (Near Washington St.) NEW YORK**

MAX MAYER, President and General Manager  
ARTHUR J. HALLOCK, Vice-President

CHESTER H. WILCOX, Secretary  
RUSSELL W. HALLOCK, Treasurer

Say Where You Saw It When You Write

**Eggs! EGGS! EGGS!****YOU Mr. Poultry Raiser**

want the largest amount of eggs in  
the shortest possible time.

**LET US HELP YOU** attain this result  
with

**Maurer's "KWALITY" Meat  
Scrap**

**A TRIAL WILL CONVINCE YOU**

*Write for price and sample today*  
1918 Farmers' Almanac **FREE** upon request

**Maurer Manufacturing Co.**

Box E. 365, Newark, N. J.

**Tom Barron S. C. White  
Leghorns**

(No other strain)

**Largest American Importer  
in 1916**

Offers for the first time hatch-  
ing eggs and day-old chicks. All  
birds trap-nested. Supply lim-  
ited. Send for circular.

**Willow Brook Poultry  
Farm**

**Allen H. Bulkley, Prop.  
Odessa, N. Y.**

**Former Student Notes**

(Continued from page 226)

'16, B. S.—Newton C. Rogers, who has been teaching chemistry and pomology at the Cobleskill school of agriculture, is now at the United States School of Military Aeronautics at Ithaca.

'16, B. S.—William D. Chappell, who taught agriculture last year at the Canandaigua Academy, is now in the United States School of Military Aeronautics at Ithaca.

'16, B. S.—C. V. Smith has charge of school gardens at Englewood, New Jersey.

'16, B. S.—Newton C. Rogers, who has been teaching chemistry and pomology at Cobleskill school of agriculture, is now at the United States School of Military Aeronautics at Ithaca.

'16, B. S.—Leo A. Muckle, upon returning early last spring from South America, where he had been working for a real estate company for a year, was made temporary representative of the State Food Supply Commission in Rockland County. On July 1st a farm bureau association was organized there and he is now employed as county agricultural agent.

'16, B. S.—Clifford W. Gilbert, who was assistant and acting county agent in Schoharie County is now county agent in Green County.

'16, B. S.—Wilbur S. Oles is in Company A, 20th United States Engineers. He has completed a three weeks' course at the engineer training school, American University, Washington, D. C., and has been transferred to a camp somewhere on the coast.

'16, B. S.—Paul F. Sanborne has left his bride, formerly Miss Eleanor Moore of Philadelphia, to train for the Aviation Service at Selfridge Field, Mount Clemens, Michigan.

(Continued on page 230)

Say Where You Saw It When You Write

# Sunny Crest Strain

## Single Comb White Leghorns

*Late Winnings of Sunny Crest Strain  
in Utility Classes Judged By  
Cornell Experts*

---

1916 Erie County Fair	7 Ribbons
1916 Greater Buffalo Show	9 “
1917 Erie County Fair	14 “

---

COMPLETE PRICE LIST DESCRIBING STOCK  
WILL BE READY ABOUT JAN. 15th, 1918

---

*Write now and we will mail it to you ---with our appreciation*

---

Sunny Crest Co.  
East Aurora, N. Y.



### Former Student Notes

(Continued from page 228)

'16, B. S.—Hester Austin is working in the bacteriological department at Albany.

'16, B. S.—Laverne S. Phillips, of Morrisville, is in the National Army.

'16, B. S.—Gladys E. Smith taught agriculture in the normal school at Farmington, Maine, last year. Miss Smith is now connected with the foods department of this college. Her present address is 206 South Geneva Street, Ithaca.

'16, B. S.—Leslie Brown, who captained the 1915-16 varsity basket ball team, recently enlisted in the 60th Company, Marine Barracks, Brooklyn.

'16, B. S.—John A. Vanderslice, editor of *The Countryman* during his senior year, is now sergeant of ordinance, first class. He is stationed at the

United States Arsenal at Augusta, Georgia.

'16, B. S.—Edgar M. Smith, Jr., obtained a commission as second lieutenant of cavalry at the first officers' training camp at Fort Benjamin Harrison. From there he was sent to Camp Sherman, Chillicothe, Ohio, and two months later was transferred to the 152d Depot Brigade at Camp Upton, Long Island.

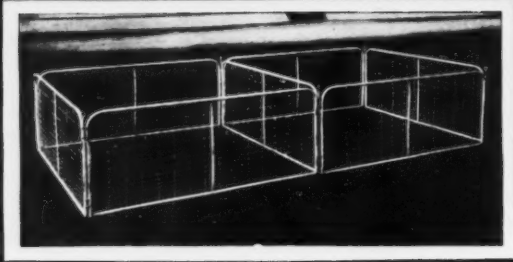
'16, B. S.—C. M. Slack has been drafted and is now in training at Camp Dix. Formerly he was on his father's farm at Black River, where he was making a start toward a herd of pure bred Holsteins. He was married last June to Miss Alda Diebler, ex., '17.

'16, B. S.—Charles Orchard Smith is traveling leader of boys' and girls' club work in New Jersey. His address is State College, New Brunswick, New Jersey.

(Continued on page 232)

## Square Deal Hog Panels- for Breeding, Sorting & Exhibition Pens

Used by  
Dozens  
of Agri-  
cultural  
Colleges



No Posts  
Bolts or  
Wrench  
needed

Panels made without wraps, bolts or projections. No posts, no nuts or wrench required to put panels together. Just slip rods into place and pen is ready for use (rods furnished). Dimensions, 3 ft. high, 8 ft. long (also other sizes).

Weighs about 50 pounds, easily handled by one man; unusually durable. Compact and neat, easily taken down, takes up very little space when in use. Just what you want - write TODAY for special circular on Stock and Exhibition panels.

### Square Deal Gates Guaranteed 5 Years

A New "Square Deal" Gate FREE if any part breaks within 5 years - this farm gate is different from all others. No joints - no nails or bolts - no malleable fittings - no joints to break. Made

without wrapping the wires around frame - strong self-locking latch - lasts a lifetime. When asking for Panel circular ask us also to send "Square Deal" Gate Folder. WRITE NOW.

**Keystone Steel & Wire Co. Dept. A-7 Peoria, Ill.**

## Cow Comfort in Zero Weather

You can hold your cows to full milk flow during a cold snap—if they are housed in Natco Barns and fed from a Natco Silo. The dead-air spaces in the hollow tile walls keep out the cold yet prevent dampness and frost from gathering.

### Natco Hollow Tile

buildings save painting—will not rot, crack or crumble. Will not harbor rats, mice or other vermin. The glazed dust-tight walls make it easy to produce clean milk. Natco Hollow Tile is widely used in fire-proofing "skyscrapers"—let the same material safeguard your stock and reduce your fire-risk.

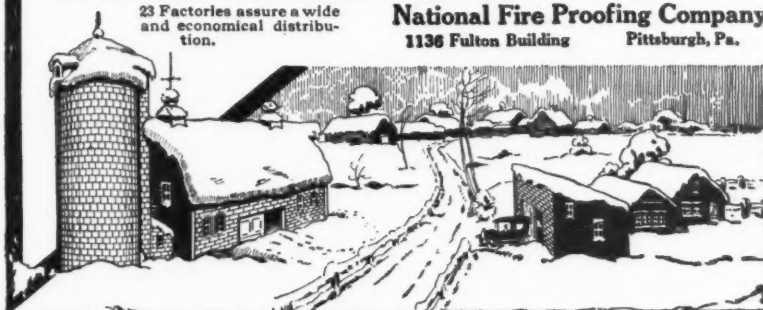
Your building supply dealer will gladly show you samples of Natco Hollow Tile and quote prices. Also, write us at once for new, illustrated "Natco on the Farm" book—1918 Edition. It's free!

23 Factories assure a wide and economical distribution.

### National Fire Proofing Company

1136 Fulton Building

Pittsburgh, Pa.



## SEED CORN

For the first time since we went into the business, we are worried because we fear that our stock of seed corn is too small for this year's requirements. It was not our fault, because we had out a very large acreage but premature frosts and hard freezes eliminated large blocks that were meant for seed. We have a moderate supply of very choice quality. Corn that will germinate ninety-eight per cent. This corn is all pedigreed, includes our famous Improved White Cap and 120 Day Yellow, both of which have taken a prominent part in Ohio, and winning state contests; also limited stock of Minnesota 13, the best very early corn, we believe, that has ever been introduced into the state.

Do not forget that we also handle the best of everything in vegetables, flower seeds, plants, bulbs, etc.

### WING SEED COMPANY

Box W

Mechanicsburg, Ohio

## THE SUCCESS OF THE

Trade Mark

Registered



## BRAND OF BEEF CRACKLINGS

is due to its WHOLESOMENESS  
and DIGESTIBILITY

**THE FLAVELL CO.**  
ASBURY PARK, N. J.

## 205 Acre Farm For Sale

(To close the estate of Jarvis Abel)

**Fertile fields  
adapted to all crops**

Two railroad stations near, nine miles to Ithaca, five miles South of Trumansburg. Two story house, ample barns, tenant house. Spring water piped to buildings. Growing timber. Ideal place for college man. A real farm at a bargain.

INQUIRE OF  
**F. W. CARMAN**  
Trumansburg, N. Y.  
R. D. 33

### Former Student Notes

(Continued from page 230)

'16, B. S.—Rodelphus Kent, who was scientific assistant in the Bureau of Markets, United States Department of Agriculture, is expecting to give up his office at Omaha, Nebraska, to which he has been recently changed from Kansas City. He has taken an examination for a commission as second lieutenant in the regular army but has not yet heard as to his success.

'16, B. S.—Helen Van Keuren, formerly assistant to Miss Pettitin of the home economics extension work in Erie County, is now one of five city conservation agents. She is working in Syracuse, with headquarters at 310 Montgomery Street.

'16, B. S.—Bertha Yerke, who was assistant manager of the home economics cafeteria during the past year, is now the food conservation agent in Niagara County.

'16, B. S.—Dorothy Starkweather is teaching at Gul's Seminary, Newark, New Jersey.

'16, B. S.—Marjorie Sweeting is teaching at Penfield.

'16, W. C.—H. Mela is working on the White Poultry Farm at Cairo.

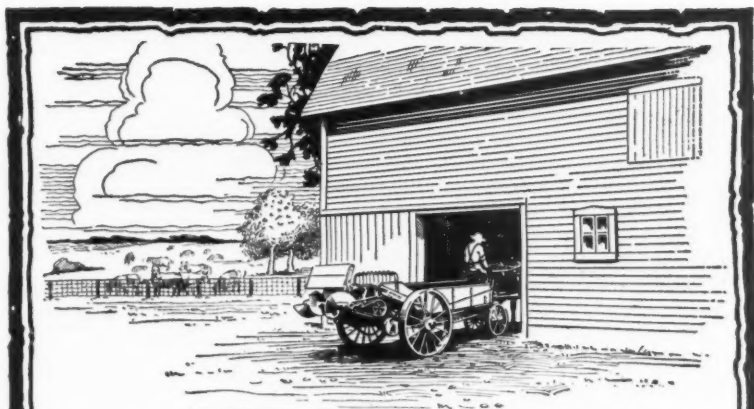
'16, B. S.—C. W. Moore, circulation manager of the *Cornell Countryman* last year, is on the old home farm at West Henrietta. We hear that he has been very successful in breeding potatoes for high yields.

'16, B. S.—F. R. Perry is working on the Side View Fruit Farms at Stanley, eight miles west of Geneva. He is manager of 100 acres of apples which are grown for fancy trade. He says he has a model place to work and is to purchase a tractor this spring.

'16, B. S.—John T. Moir has been engaged in experiment work in the sugar cane industry in the Hawaiian Islands for the past year.

(Continued on page 234)

Say Where You Saw It When You Write



## The Cure for a Billion Dollar Waste

**T**HIS year—if you own no spreader, you are not only losing out on the bigger yields and profits that should be yours, but you are contributing to a billion-dollar manure waste, and stopping your ears to the world-call for food.

We have facts and figures to show that in scores of cases the use of an International Harvester spreader has added to crops more than enough to pay for the spreader in one year.

The dealer will show you the new **No. 8 Low Corn King, Cloverleaf or 20th Century**. This is the latest International Harvester spreader, the popular 2-horse, light-draft, narrow-box machine with the remarkable new spiral wide-spread. For the small-to-average farm this is bound to be the spreader success of the year. Look it over from tongue to spiral, see it at work, and you will agree with us.

In the **Low Corn King, Cloverleaf and 20th Century** lines are larger spreaders too, with disk or spiral wide-spread, all of narrow, easy-handling width; low, of remarkably light draft, strongly and simply constructed. Write us for catalogues and see the local dealer for a satisfactory money-making **Low Corn King, Cloverleaf or 20th Century spreader**.

**International Harvester Company of America**

(Incorporated)



**CHICAGO**

Champion

Deering

McCormick

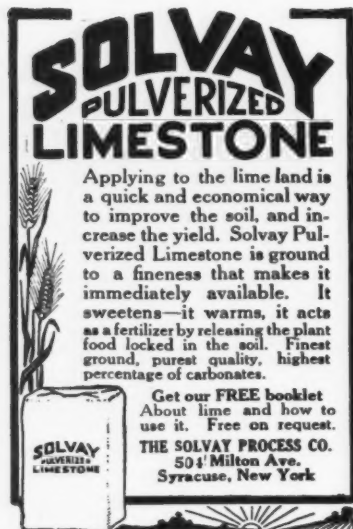
Milwaukee

**U S A**

Osborne



Tell Advertisers Who Introduced You



**SOLVAY  
PULVERIZED  
LIMESTONE**

Applying to the lime land is a quick and economical way to improve the soil, and increase the yield. Solvay Pulverized Limestone is ground to a fineness that makes it immediately available. It sweetens—it warms, it acts as a fertilizer by releasing the plant food locked in the soil. Finest ground, purest quality, highest percentage of carbonates.

Get our **FREE** booklet About lime and how to use it. Free on request.

**THE SOLVAY PROCESS CO.**  
504 Milton Ave.  
Syracuse, New York

**CORNELL UNIVERSITY  
ATHLETIC ASSOCIATION**

**Cornell Basketball**

**January Schedule**

Jan. 11—Columbia at New York

“ 12—Army Ambulance Service at Allentown

“ 16—Rochester at Ithaca

“ 18—Princeton at Ithaca



**Former Student Notes**

(Continued from page 232)

'16, B. S.—W. S. Oles is with the Coe-Mortimer Co.

Ex. '16—R. Stearns owns and operates a butter and cheese factory at Carthage, where he manufactures fancy butter and cheeses.

'17, B. S.—Mrs. Ralph R. Perkins, formerly Edna Darling, is a county agent at Albany, Albany County.

'17, B. S.—P. G. Drabelle and L. R. Skinner have both changed their address from Newport, Rhode Island, to Mine Detail, State Pier, New London, Connecticut.

'17, B. S.—Harold O. Johnson is in the United States Naval Reserve and is serving on board Scout Patrol No. 663, New Bedford Section, New Bedford, Massachusetts.

'17, B. S.—Edwin I. Kilbourne has received a commission as ensign in the United States Naval Reserve and has been ordered to Annapolis for four months of intensive training in the United States Naval Academy.

'17, B. S.—S. D. Mandel is a private in the Quartermaster's Corps, Construction Division, and is on duty at the New York State Arsenal, 35th Street and 7th Avenue, New York City.

'17, B. S.—R. B. Markham is a cadet in the United States Army School of Aeronautics at Cornell.


'17, B. S.—Hollis H. Clark was taken in as a partner by his father in their 250 acre farm at Warsaw.

'17, B. S.—Charles S. Dana and C. Stuart Copper are operating a farm together in the Florida Everglades.

(Continued on page 234)

Say Where You Saw It When You Write





# The NEW HINMAN MILKER

10  
Years'  
Success

The HINMAN Milker has been made the recognized standard of perfection and efficiency through our 10 years of concentration on one type of machine—the Individual Pump-Valve Chamber Milker.

## ACCOMPLISHMENTS ATTAINED

This specialization has meant refinement in design and workmanship—insured mechanical betterments—insured adaptability to the great variety of physical condition found in every dairy herd.

The cow does not have to be adapted to the HINMAN. Odd cows—nervous cows—easy milkers—hard milkers—and cows with uneven udders are made comfortable by the HINMAN Individual Pump—Single unit adaptable-to-each-cow machine that always milks the same way day in and day out.

The HINMAN Principle stands Approved. It's the only way to offset increasing costs in the dairy. It is no experiment for you when thousands use it successfully. Its simplicity and volume means low cost to you.

Over  
30,000  
Sold



Protected Valve Chamber  
Free Service.



Individual Pump with Single  
Adjustable Vacuum Control. Cows per hr.

Weight: 17 lbs.

Power Required: 1-6 H.  
P. per single unit, gas or  
electric.

Pail Capacity: 40 lbs.

Protected Vacuum Valve  
Chamber: Patented; auto-  
matic—operates with no  
adjustments.



Natural Action  
Teat Cups

Imp. San. Claw. 118-128 Elizabeth Street, ONEIDA, N. Y.

Some good territory open for live agents.

## STUDY SPECIFICATIONS

Capacity: 1  
man—3 milk-  
ers—18 to 25  
Adjustable Vacuum Control. Cows per hr.

Demountable Claw:  
Seamless teat cups, im-  
proved mouth-piece rub-  
bers, special grade rubber  
tubing.

Individual Portable  
Pump: Eliminates tank  
and pipe system.

Armco Rust Resisting  
Pail: —with patented ball  
rest for the teat cups.

Individual Cow Record  
can be kept.

HINMAN  
Valve Chamber  
MILKER



The New  
HINMAN  
Milker



Mr. R. L. Hinman  
offers this free book.

## THIS NEW CATALOG IS READY

Write today—read the experiences of prominent and expert dairymen in all leading dairy sections. Investigate NOW.

**HINMAN MILKING MACHINE CO.**

## SAVE THE CHICK

There is no more excuse for the heavy loss of chicks than there is for an equally heavy loss of calves, colts, pigs or lambs. While there may be other contributing causes, the primary reason for this greater mortality of chicks is due to their improper feeding.

Mature laying hens require high protein feed to furnish the requirements for egg production. The growing chick requires less protein but instead a liberal quantity of carbohydrates and mineral matter, properly proportioned to furnish the requirements of body structure necessary for the development of strong, healthy growth. Over feeding of protein greatly impairs the vitality, resulting in weak chicks and high mortality.

As the result of many feeding determinations and observations, we have developed feeds for chicks very low in fibre and crude fats (both of which are harmful to chicks) and supplied from easily digestible sources a sufficient amount of carbohydrates and mineral matter to insure good health and vigor. Barring accidents, the plan of feeding which we have developed reduces mortality to the minimum.

For best development, growing chicks require feed properly proportioned to contain from 7 to 9% of digestible protein, 65 to 75 therms of heat and energy food and from 4 to 6% ash. Depending on their age, TIOGA GROWING MASH fed with TIOGA CHICK FEED or TIOGA GROWING GRAINS according to instructions contained in the booklet "Tioga Poultry Feeds" will meet this standard in every particular.

To furnish nourishment for maximum egg production while maintaining normal vigor, laying hens require feed containing 15% protein, 60 therms of heat and energy food and 6% mineral matter. TIOGA LAYING FOOD is carefully made to meet this standard.

TIOGA FEEDS are guaranteed satisfactory or money back.

**Tioga Mill & Elevator Co.**  
**Waverly, N. Y.**

### Former Student Notes

(Continued from page 234)

'17, B. S.—Douglas S. Dilts is at Camp Dix with Company F, 311th Infantry.

'17, B. S.—D. U. Dunham and C. L. Dunham have been assisting their father on the home farm since they left the University last April. They have about 90 acres in crops and 250 acres in pasturage. They have a large herd of grade Holstein cattle and a few pure breds. During the past summer they have done some work in spraying potatoes and have had considerable success, saving the best for the next year's seed.

'17, B. S.—Hugh J. Ennis is a second lieutenant in the 3rd Battalion, 153d Depot Brigade, Camp Dix.

'17, W. C.—F. E. Gates is on his father's homestead where a herd of 100 pure bred Holsteins are kept. They also have a flock of 300 White Wyandottes and Rhode Island Reds. The farm is a 275 acre dairy farm and a large amount of crops are raised. They have a Case tractor, three automobiles, a milking machine and electric power from Niagara Falls; all of which tend to make the farm an up to date enterprise.

'17, B. S.—Edgar L. Schwartz is a corporal in Company B, 307th Infantry, Camp Upton, Long Island.

'17, W. C.—LaRue H. Skillman is on his father's dairy farm at Smithville Flats.

'17, B. S.—Ruth Starr is at Danvers, Massachusetts, teaching in the Essex County Agricultural School.

'17, B. S.—Lester J. Weil is in charge of the office of the Bureau of Markets of the United States Department of Agriculture in Philadelphia. His address is 206 South Thirty-Sixth Street. E. E. Conklin, Jr., who is living at the West Philadelphia Y. M. C. A. is associated with him.

(Continued on page 238)

Say Where You Saw It When You Write

# Get Big Hatches— then *Raise* the Chicks

America must produce more poultry and eggs, hence American poultrymen should apply "efficiency" to their business. They must stop loss or waste of hatching eggs, baby chicks and labor.

This means they must use the most efficient incubators and brooders even if compelled to discard present wasteful equipment and replace with the time-saving, results-insuring type. Newtown equipment will not disappoint you. The

## Newtown Giant Incubator

*"hatches the most chicks, the best chicks,  
with least labor and at lowest cost."*

These are straight facts! Ask Newtown owners. The Newtown Giant is at once highly efficient and most convenient, automatic in operation, fitted with exclusive features which save labor and worry and insure uniformly fine results. Newtown hatches are famous for the number, size and vigor of the chicks produced. Learn all about this great machine. *Write for the Newtown Incubator Catalog, stating the size of machine which interests you.* Newtowns range from 600 to 24,000 eggs. When it comes to brooding, the

## Newtown Colony Brooder

*"grows the most chicks, the best chicks,  
with least labor and at lowest cost."*

More facts! The Newtown is the original coal-burning colony brooder, the most popular and successful type of brooder ever produced. Like all good things, it has been imitated but never equalled. *First in the field, it still leads.*

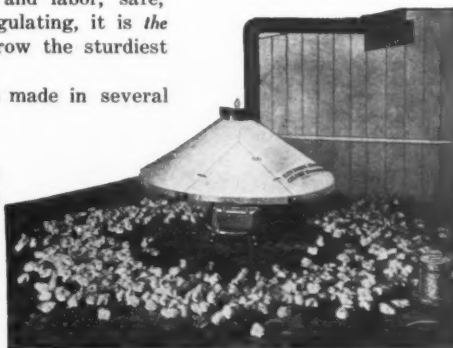
Convenient, economical of fuel and labor, safe, durable, self-feeding and self-regulating, it is the brooder for those who wish to grow the sturdiest chicks and lots of them.

The Newtown Colony Brooder is made in several sizes.

*Advise us the number of chicks you wish to grow and we will send our brooder catalog free.*

**NEWTOWN GIANT  
INCUBATOR CORP'N**

66 Warsaw St. Harrisonburg, Va.



Tell Advertisers Who Introduced You

**Former Student Notes**

(Continued from page 236)

'17, B. S.—E. E. Conklin is with the bureau of markets at Washington.

'17, B. S.—Chester Menke is drilling in an infantry regiment located at Chillicothe, Ohio.

'17, B. S.—C. H. Rector of Binghamton married Miss Adelaide Vosbury of Conklin last October.

'17, B. S.—Paul R. Reisler of Quakertown, Pennsylvania, died last April.

'17, B. S.—W. S. Young is proprietor and manager of the Central New York Farms Company, located in Ithaca. He is dealing especially in poultry and poultry products.

'17 B. S.—Ruth Davis, of Little Falls, spent several days in Ithaca during the first part of November.

'17, B. S.—Helen Murphy is assistant instructor in Biology in the College of Agriculture. She is living at 208 Dearborne Place.

'17, B. S.—Robert A. Browning, who went to France last spring, has a commission and is in charge of a transport section of forty American boys and seventeen Pierce-Arrow trucks.

'17, B. S.—H. S. Bole has gone to the farm of R. E. Chapin & Sons, Batavia, where he takes charge of the feeding of advanced registry cows. At least 200 head of cattle are maintained on this 600 acre farm.

'17, B. S.—William D. Crim, last year's president of the agricultural association, is at the government aviation camp at Millington, Tennessee.

'17, B. S.—John K. Baildon has gone to Dover, Delaware, to take charge of the Dairy Department of a large farm.

'17,—E. E. Conklin recently gave a series of free lectures on home gardens in the public grammar schools of Staten Island. In connection with these lectures, which are being held under the auspices of the Staten Island chapter for National Aid, Mr. Conklin offers professional advice to private parties.

'17—D. M. Hinrichs, a member of the *Countryman* editorial staff for three years, recently sailed for France with the Cornell unit of the American Field Ambulance service. With Hinrichs are H. J. Ludington, and L. B. Seaver, also members of the senior class.

'17, W. C.—J. M. Carlton has charge of the poultry on the Rose Farm at Geneva.

'17, W. C.—Richard Grundman has been working on the home farm since he left the college last February.

'16, B. S.—Helen Von Reusen is at present assistant to the Home Economics Manager of the Erie County Farm Bureau. Her address is 135 Summit Ave., Buffalo.

(Continued on page 240)

**A. B. BROOKS & SON***Pharmacists*

126 East State Street

**FINE PRESCRIPTION WORK****Wanzer & Howell***The Grocers*

Our Name Signifies

**QUALITY AND SERVICE**

Remember that we have a Sea Food Market where you can buy Fresh Fish, Oysters, Clams and other Sea Foods in their season.

## We Print in Natural Colors

Why don't you make your  
printed matter show your  
goods just as they appear?

We will do this for you at  
a trifling cost over black  
and white.

Words cannot describe  
your goods as a color illus-  
tration never fails to do.

Do you want big business?

---

---

*Write for samples of  
our process-color work*

---

---

Christy-Color-Printing-Engraving, Inc.

Rochester, New York



### Former Student Notes

(Continued from page 238)

'17, B. S.—C. E. Gates ranks as a second lieutenant at the Eastern Department Headquarters, Governors Island. He is doing clerical work.

'17, W. C.—Messrs. R. B. Reynolds, A. R. Greenburger, and E. C. Hewlett are now working for the department of poultry husbandry.

'17, B. S.—Marion Hess, last year's home economics editor of *The Countryman*, is now food conservation agent in Oneida County with headquarters at Utica.

'17, B. S.—J. K. Baildon is now managing a one hundred acre stock farm at Dover, Delaware. Forty-five head of pure bred Holsteins are kept and large quantities of tomatoes are grown for a nearby cannery.

'17, W. C.—W. F. Minneker is now employed in the poultry department on the farm of Mr. E. F. Briggs at Pleasant Valley.

'17 M. F.—F. H. Millen has been appointed State Forester of Texas and will shortly leave with his wife to enter upon his duties.

'17, B. S.—Irving H. Doetsch was drowned last July, while swimming in Lake Erie. Doetsch was an assistant in the department of vegetable gardening while attending Cornell. He was director of home gardens at Buffalo at the time of his death.

'17 B. S.—H. E. Allanson is now scientific assistant in the Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.

'17, B. S.—R. L. Gillette is now assistant in farm management at Cornell.

(Continued on page 242)

## The Man who has attended an Agricultural School

comes in contact with tools and materials that aid in efficiency and convenience about the farm. He misses them upon his return home from college and often wishes he had some of the things he had or saw while there. We maintain a **Mail Order Department** and solicit your inquiry regarding such items. We carry all **Agricultural Books, Poultry Knives in sets, even the Dairy and Farm Suits.**

ASK US ABOUT THEM

**The Corner Bookstores**  
Ithaca, N. Y.

Say Where You Saw It When You Write

# This Tag on Every Bag

## Fancy Recleaned SEED OATS

FROM

**Tioga Mill & Elevator Co.**  
Waverly New York

These are *Selected Stock* from which false oats, light oats and pin oats have been removed, leaving only the best heavy oats.

If you plant oats to raise oats and get the largest returns for your work and investment, it will pay you to plant only seed that will grow and produce strong plants. False and light oats will not grow. Good oats with strong germinating qualities insure larger returns.

FRONT

BACK

## Sowing Selected Oats Pays Big!

In thorough germination—in bigger crops. Our seeds are sold in their natural state or treated for smut by approved government method. The Department of Agriculture and Farm Bureau Agencies strongly recommend planting treated oats as it insures increased production with no added expense aside from the slight difference in cost.

*If "treated" it will say so on the tag.*

**Tioga Mill & Elevator Co.**

**Waverly, N. Y.**

**Feed that means  
More Milk at Less Cost**

You who get just an average yield of milk from your herd fed with expensive grain will be interested in a feed that costs less and will increase the flow from each cow by one to two quarts per day.



## International Special Dairy Feed

will do that and more. It will keep your cows healthy and happy. It is a palatable, appetizing and stimulating feed for them, blended from choice grain products, molasses and cottonseed meal. Corn and oats cost much more and are not so healthful and efficient. International Special Dairy Feed can be mixed with home grown grains or fed as an entire grain ration and it will be profitable any way you use it.

### Order Before It Is Too Late

You will need this economical food next winter. Get it now before the freight congestion and while our continually grinding mills can ship it. See your dealer today. Write us if there is no dealer near you, but act now.



**International Sugar Feed Co.**  
Minneapolis, Minn. Mills at Minneapolis and Memphis

Say Where You Saw It When You Write

**Regulation U. S. Shirts**

**Regulation Army Shoes**

**Regulation Military  
Suits and Overcoats  
Carried in Stock .:**

*Puttees in Pigskin, Cordovan  
and French Calf Leathers*

*A full stock of Suits and Overcoats  
for Fall & Winter Season  
of 1917-1918*

We Sell STETSON SHOES

**Buttrick & Frawley**

**Right and On Time  
Gets 'Em**



**Stover Printing Co.**  
115 North Tioga Street

### Former Student Notes

(Continued from page 240)

'17, B. S.—K. C. Fox, who was an assistant in the poultry department while a student at Cornell, is now instructing in poultry husbandry at the Cobleskill state school of agriculture.

'17, B. S.—Carrie J. King is teaching domestic science in the high school at Griegsville.

'17, B. S.—George S. Kephart, who was at Newport in the mosquito fleet, has been transferred to the forestry regiment.

'17, B. S.—E. H. Litchfield is located in Tioga County as supervisor of agriculture in the second supervisory district. This position is said to have the distinction of being the first of its kind established in the state.

'17, B. S.—R. C. Parker, who was assistant county agent in Clinton county, was transferred to Suffolk county as representative for the food supply commission. Upon the organization of a farm bureau association there he was elected county agent.

'17, B. S.—N. G. Farber, assistant in farm practice while an undergraduate, is now agricultural agent of Rensselaer county. He was serving there under the food supply commission until a farm bureau association was organized last May.

'17, B. S.—Ralph F. Perkins and Miss Edna Darling, B. S., '17, were married at Albany, last August.

'17, B. S.—M. E. Farnham has been appointed instructor in floriculture and will devote his time to investigational work.

'17, Ex.—W. Atlee Burpee, Jr. is treasurer of the W. Atlee Burpee Seed Co. of Philadelphia.

(Continued on page 244)

## farmers' week at cornell

---

the war puts an especially heavy burden on the farmer and adds greatly to his problems

farmers' week at the new york state college of agriculture will this year aim to help solve these problems

the exchange of ideas with those on the program and with those practical farmers who will attend during the week will help you more this year than ever before

come prepared to give help and to get it

---

the new york state college of agriculture  
at cornell university ithaca new york

february 11-16 '18

**Former Student Notes**

(Continued from page 242)

'17, B. S.—Wayland P. Frost is now employed jointly by the central office of Farm Bureaus and the Bureau of Farmers' Institute at Albany as state superintendent of dairy demonstration work.

'17, Ex.—David Burpee is now president and general manager of the W. Atlee Burpee Co. of Philadelphia.

'17, B. S.—Frank P. Cullinan, who was located at Batavia during the past summer representing the State Food Supply Commission, is now assistant here in the pomology department.

'17, B. S.—L. J. Norton is now assistant in farm management at Cornell.

'18—Frederick Alfgy, who left last spring, is now at New London, Connecti-

cut, in the United States Coast Defence Naval Reserve.

'18—Foster H. Benjamin, who enlisted in the United States Naval Reserve soon after our entrance into the war, is now stationed at Newport, Rhode Island.

'18—Leonard Stock, who left Cornell soon after war was declared, is now in the United States Coast Defence Naval Reserve, on board the mine sweeper *Pocomoke*.

'19, Ex.—F. J. Hopkins, who left early last spring for war service, is now in the government aviation school at Princeton.

'19, Ex.—A. F. Lockwood is teaching secondary agriculture in the high school at Hannibal.

## Lang's Palace Garage

Safe Storage  
Expert Service

—  
Agents for

Cadillac :: Oakland  
Hupmobile :: Paige

117-121 E. Green St.  
Phones 95

—  
TAXI SERVICE

## C. H. Webster, M. D.

CORNELL, '04

—  
Representing

New York Life In-  
surance Co.

—  
121 Catherine St. Ithaca, N. Y.

Both Phones



## PRINTING

That is our line  
Try us on your  
next order, no  
matter what it is.



**The Atkinson Press**

South Tioga Street

*We print the "Countryman"*

Ask Your Grocer for

## Burns' Family Bread

FOR SALE EVERYWHERE

Scientifically made from the  
best ingredients obtain-  
able, in a clean  
bakery

*Call and see for yourselves*

**Breakfast Rolls a Specialty**

Bakery at 110 N. Corn Street

## The Tea Room

Tea  
Room  
Specialties

Luncheons  
and  
Dinners

Telephone Bell 4-F 25

**At Forest Home**

"Printing at a Price that Pleases"

**Norton Printing Company**

Book, Job and Pub-  
lication Printers

317 E. State St.      Foot of Hill

**R. A. HEGGIE & BRO. CO.**

*Jewelers*

We carry a full line of Jewelry,  
Art Goods, etc., and make  
College Pins and Badges

136 EAST STATE STREET



*Ball Bearing; Long Wearing*

## **"Silent Smith"** wins the fight against noise.

[Producing power of both typist and executive is increased by this 100 per cent efficient machine.]

In eliminating the clatter that up to this time has characterized typewriters, the L. C. Smith & Bros. Typewriter Company has taken the longest stride ahead since the introduction of "visible" writing.

### **Model 8—The "Silent Smith"**

—runs so quietly and so smoothly that it is a relief to the nerve racked office worker.

There are many other new features worthy of consideration, including the decimal tabulator and the variable line spacer. Both are part of the regular equipment.

A left hand carriage return is furnished if desired, in place of the regular right hand lever.

An illustrated catalog of Model 8 may be had for the asking. Drop a card now to

**L. C. Smith & Bros. Typewriter Company**

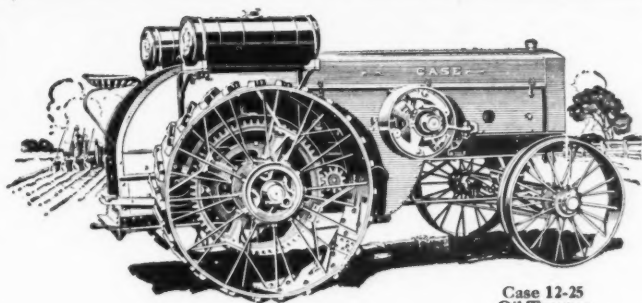
Home Office and Factory: Syracuse, N. Y.

Branches in All Principal Cities

**J. E. Van Natta, Agent**



# CASE



Case 12-25  
Oil Tractor

## A Case Tractor For Every Farm

No farmer knowing the dependability of Case power farming machinery need look elsewhere for the exact tractor he wishes for his farm. There are four sizes of Case Kerosene Tractors—9-18, 10-20, 12-25, and 20-40.

So whatever the size of the farm, there is a Case Tractor of the right size.

Case Tractors—like other Case machinery—are absolutely dependable. Case builds only the best. All know that cheap machinery is expensive. The Case standard of highest grade material and workmanship has never been lowered. This means continuous protection to the farmer.

The economy of Case Tractors is shown in actual figures in a test bulletin which we have published. A copy will be sent free upon application. Write today.

**J. I. CASE THRESHING MACHINE CO., Inc.**  
(Founded 1842)

679 Erie Street, Racine, Wis.

Descriptive Printed Matter. All Free  
—entire series of booklets and folders. Tell  
which interest you.

- 5—Hay Balers
- 6—Silo Fillers
- 7—Road Machinery
- 8—Automobiles

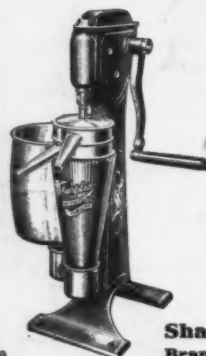
General Catalog, describing the entire  
line. It is free.

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